SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

Main Office
818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435

t (213) 236-1800
f (213) 236-1825

www.scag.ca.gov

MEETING OF THE

REGIONAL COMPREHENSIVE PLAN TASK FORCE

Monday, July 25, 2005
10:30 a.m. – 12:30 p.m.

SCAG Offices
818 W. 7th Street, 12th Floor
Riverside B Conference Room
Los Angeles, California 90017
213.236.1800

VIDEO CONFERENCE LOCATION
SCAG, Riverside Office
3600 Lime Street, Suite 216
Riverside, CA 92501

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Deby Salcido at 213.236.1993 or salcido@scag.ca.gov

Agenda and minutes are available on the web at: www.scag.ca.gov/rcp

SCAG, in accordance with the Americans with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. If you require such assistance, please contact SCAG at (213) 236-1868 at least 72 hours in advance of the meeting to enable SCAG to make reasonable arrangements. To request documents related to this document in an alternative format, please contact (213) 236-1868.

REGIONAL COMPREHENSIVE PLAN TASK FORCE

AGENDA

July 25, 2005

1.0 CALL TO ORDER — **Councilmember O'Connor, Chair**

2.0 PUBLIC COMMENT PERIOD

Members of the public desiring to speak on an agenda item or items not on the agenda, but within the purview of the Committee, must fill out and present a speaker's card to the Assistant prior to speaking. A speaker's card must be turned in before the meeting is called to order. Comments will be limited to three minutes. The chair may limit the total time for all comments to twenty (20) minutes.

3.0 REVIEW and PRIORITIZE AGENDA ITEMS

4.0 CONSENT CALENDAR

4.1 Minutes of May 23, 2005

5.0 ACTION ITEMS

5.1 Draft Economy and Education Chapter — **Bruce DeVine**
Attachment — **SCAG Staff**

Staff will present the new draft version as requested by the Task Force.

Recommended Action: Forward this version, along with the "existing conditions" and "action plan" to the CEHD Committee for review at its next regular meeting.

5.2 Draft Energy Chapter — **Jennifer Brost**
Attachment — **SCAG Staff**

Staff will present the Preliminary Draft Energy Chapter for consideration.

Recommended Action: Forward to the Energy and Environment Committee for release to the public.

5.3 Solid and Hazardous Waste Chapter **Attachment** — **Jacob Lieb, SCAG Staff**

Staff will present the preliminary Draft Solid and Hazardous Waste Chapter for consideration.

Recommended Action: Forward to the Energy and Environment Committee for release to the public.

5.4 CEQA Reform and Potential Expanded RCP Approach — **Jacob Lieb, SCAG Staff**

Staff will describe pending discussions on reform of CEQA and its potential affect on the conduct of the RCP effort.

Recommended Action: Report to the Policy Committees on expanding the RCP effort.

6.0 INFORMATION ITEMS

7.0 CHAIR'S REPORT — **Councilmember Pam O'Connor, Chair**

8.0 STAFF REPORT

9.0 FUTURE AGENDA ITEMS

Any Committee members or staff desiring to place items on a future agenda may make such request. Comments should be limited to three (3) minutes.

10.0 ANNOUNCEMENTS

11.0 ADJOURNMENT

The next meeting of the Regional Comprehensive Plan Task Force will be held in the SCAG offices on Monday, August 22, 2005.

Regional Comprehensive Plan Task Force

Action Minutes for May 23, 2005

The following minutes are a summary of actions taken by the Regional Comprehensive Plan Task Force.

The Regional Comprehensive Plan Task Force held its meeting at the Southern California Association of Governments offices in Los Angeles. There was a videoconference at the SCAG Inland Office in Riverside. The meeting was called to order by Chair Pam O'Connor, Santa Monica.

Committee Chair: Pam O'Connor, Santa Monica
Committee Vice Chair: Susan Longville, San Bernardino

Members Present	Representing	Members Absent	Representing
Aldinger, Jim	Manhattan Beach	Bowlen, Paul	Cerritos
Cook, Debbie	Huntington Beach	Garcia, Lee Ann	Grand Terrace
Feinstein, Michael	Santa Monica	Longville, Susan	San Bernardino
Miller, Mike	West Covina	Ovitt, Gary	San Bernardino
Nowatka, Paul	Torrance	Pettis, Greg	CVAG
O'Connor, Pam	Santa Monica		
Perry, Bev	Brea		
Young, Toni	Port Hueneme		

New Members
None

1.0 CALL TO ORDER
Pam O'Connor, Chair, called the meeting to order at 10:41 a.m.

2.0 PUBLIC COMMENT PERIOD
None offered.

3.0 REVIEW AND PRIORITIZE AGENDA ITEMS
The order of action items heard was reversed, with item 5.2 presented before item 5.1, without objection.

4.0 CONSENT CALENDAR

4.1 Minutes of April 25, 2005 accepted

5.0 ACTION ITEMS

5.1 Economy and Education Chapter Revisions
Bruce DeVine, SCAG Chief Economist, provided a report on the chapter development reflecting the changes after the last Task Force meeting. Each point was read and discussed and the members discussed further changes. (Toni Young requested an email of the revised document prior to the next meeting, so changes could be reviewed beforehand to facilitate Task Force input.)

Action: The Task Force, without objection, directed that staff revise the report, based on comments, and agendize for the next meeting.

5.2 Transportation

Sina Zarifi, SCAG staff, went over each point of the attachment, i.e. RTP Goals, Adopted Policy, Recommended Actions of System Improvements, TDM – Non-Motorized (which he defined), Land Use, Highways and Arterials, Transit, Goods Movement, Aviation and Goods Movement. There was discussion regarding local control of land use and incentives for cities to do the right thing, but work through COGs.

Action: The Task Force instructed staff to take the report to the Transportation & Communications Committee, without objection. Staff will suggest language for the Maglev chapter so that changes can be made to it in the future.

6.0 INFORMATION ITEMS

6.1 Schedule and Next Steps

Ashwani Vasishth, SCAG staff, discussed key enterprises that SCAG is undertaking: Compass, RTP and RCP, which should capture policy to implement EIR process. CEQA should be tweaked to look at overall process. Sylvia Patsaouras, SCAG staff, stated that we have been in discussion with experts who are outside of SCAG. There was a short discussion.

7.0 CHAIR'S REPORT

None

8.0 STAFF REPORT

9.0 FUTURE AGENDA ITEMS

None discussed

10.0 ANNOUNCEMENTS

Again, it was suggested that the Task Force's next meeting be held at the Museum of Natural History with a tour afterwards of the exhibit entitled, "Collapse." All members present agreed. It was announced that there would be no meeting in June, resuming the normal schedule in July. All members agreed that there should be no lunch served at these meetings, even though they go to 12:30 p.m.

11.0 ADJOURNMENT

The meeting was adjourned at 12:15 p.m. The next Task Force was scheduled for July 28, 2005 from 10:30 a.m. to 12:30 p.m., the location to be announced later.

MEMO

DATE: **July 8, 2005**

TO: **Regional Comprehensive Plan Task Force**

FROM: Bruce DeVine, devine@scag.ca.gov, (213) 236-1903

RE: **Draft RCP Economy and Education Chapter**

RECOMMENDED ACTIONS

Recommend that the Task Force forward this Draft version of the RCP Economy and Education Chapter, along with the two additional sections referenced below as soon as they are ready, to the CEHD Committee for review at its next regular meeting.

BACKGROUND INFORMATION

The attached *Draft Economy and Education Chapter* of the Regional Comprehensive Plan and Guide represents the third stage in the development of this chapter. In the initial stage staff presented a matrix titled "SCAG Economic Policy Statements and Recommendations for Revision," which contained a list culled from four key SCAG documents: the Economy Chapter of the 1996 RCP&G, the 2004 RTP, Southern California Compass, and the "Southern California Regional Strategy for Goods Movement: A Plan for Action" (March 2005). This list of policy statements and recommendation was then amended and added to in two subsequent rounds, in the second of these receiving an entirely new "Overarching Theme Statement" drafted by the Task Force.

As requested by the RCP Task Force at its May 23, 2005 meeting, this new Draft version incorporates in red all edits and changes made by the Task Force to date. In addition, also in response to the Task Force's direction, this version eliminates the matrix used up until now to present SCAG economic policies and puts the revised and added policy statements into text form.

An "existing conditions" section is in preparation and will be married to this third stage of the chapter when it is completed. An action plan is also being prepared for the chapter. As the latter depends in part on the "existing conditions" section, the two will be finalized in tandem.

This Draft RCP Economy and Education Chapter, as presented, is preliminary and has not been subject to formal approval of the SCAG Regional Council or any Committee. The draft Chapter is based on the discussions of the RCP Task Force and is being made available at this time for information and for suggestions.

DRAFT RCP ECONOMY AND EDUCATION CHAPTER

Incorporating comments and suggestions made by
The RCP Task Force at its meeting
on May 23, 2005

Bruce F. DeVine
Chief Economist
(213) 236-1903
devine@scag.ca.gov

June 30, 2005

This Draft RCP Economy and Education Chapter, as presented, is preliminary and has not been subject to formal approval of the SCAG Regional Council or any Committee. The draft Chapter is based on the discussions of the RCP Task Force and is being made available at this time for information and for suggestions.

Draft Economy and Education Chapter[1]

May 2005

Regional Comprehensive Plan Task Force

OVERARCHING THEME STATEMENT

A bold new strategy is needed to ensure the SCAG region economy flourishes in the future. The first step is to identify the actions we as a region can take to improve our attractiveness to enterprise and create jobs that will enable all the region's workers to meet basic needs. The Compass Growth Visioning principles--in particular livability, prosperity, and sustainability--can serve as the foundation for this new economic strategy. In order to satisfy the prosperity and sustainability criteria, ~~regional [local~~ government?] policies must be developed that enable business to be profitable and competitive regionally, nationally and internationally while at the same time ensuring sufficient growth in employment and incomes to alleviate poverty and meet the needs of all who participate in the economy. Community planners and businesses should be encouraged to provide a variety of housing to meet the needs of all income levels; housing should be located near jobs; and environmental justice must be ensured. Governments and private sector organizations in the SCAG mega-region must think strategically as they develop plans for their future.

Revised Economic Policy Statements

Regional Economic Goals

1. Income targets for 2030 should be phrased in terms of desired growth rates of real income and meeting basic needs.
2. Growth in the region's economic prosperity should be shared broadly by residents throughout the region.

Regional policy makers need to be concerned with five major categories of competitive resources:

a. A competitive work force
b. Efficient infrastructure
c. Quality of life
d. The "business climate"
e. Business leadership

Attracting, retaining, educating and training a diverse labor force has become an increasingly important objective for regional economies. More emphasis needs to be put on this objective given the low level of educational achievement of much of our work force and working age youth. The ability to attract workers (and firms) is dependent upon critical infrastructure investment that can create good schools, mitigate congestion and crime problems, and create world class recreational opportunities.

---

[1]Based on the Revised Economy Chapter of the 1996 RCP&G, the 2004 RTP, Southern California Compass, and the "Southern California Regional Strategy for Goods Movement: A Plan for Action" (March 2005)

This Draft RCP Economy and Education Chapter, as presented, is preliminary and has not been subject to formal approval of the SCAG Regional Council or any Committee. The draft Chapter is based on the discussions of the RCP Task Force and is being made available at this time for information and for suggestions.

For the region to remain globally competitive and at the same time locally self-reliant, significant new investment will be required to expand capacity in order to benefit from the strong growth in international trade expected. Quality of the environment must also be respected.

Governments and private sector organizations must develop global trade logistics infrastructure support facilities that will help local businesses remain competitive and assist the region in attracting ~~foreign~~ investment. Public investment is necessary to attract private investment, as well as to maintain and improve the quality of life. Quality of life, in turn, includes a safe and healthy environment, ~~al amenities~~, adequate resources to combat crime, community and domestic cultural resources, affordable housing, and efficient transportation systems.

Rules and regulations are a factor in business location . . . Southern California cannot ignore the implications of permit processes on location decisions. State and local government must have flexibility to meet needs in order to bring businesses and jobs into the community. SCAG should explore ways to assist cities in mitigating delays caused by permitting. Speeding up the permit process is a real need in view of the housing crisis.

~~The new economy makes impractical and inappropriate the old hierarchical, big company-dominated (leadership) structures of the past. It will require a new kind of business leadership—drawing from the region's increasingly diverse economic and demographic base~~.
The new economy requires a new kind of business leadership--drawing from small and medium-size business and the region's increasingly diverse economic and demographic base.

The region must increase its share of employment in those industries and service sectors where wages and salaries will be higher than average and where growth nationwide and internationally is expected to be strong. This could include the emerging information-driven industries which typify the fast-growth, high-wage arenas that will define the nation's economic future. However, everyone who participates in the economy should be able to meet his or her basic needs on a sustained basis for the common good. The new model should include jobs designed to meet environmental goals. It should also include industries with a defined career ladder that do not necessarily require advanced education (e.g., logistics). FedEx and UPS are examples of this type of industry.

A state-of-the-art strategy to energize basic industry will require collaboration and cooperation through industrial clusters . . . The first step is to increase awareness of both the private and the public sector in the region as to what efforts are already under way supporting industry cluster formation.

Fundamental fiscal reform at the state and local level--involving sales, property, and income taxes--will be required in order to meet the capital investment needs of the region's economy~~.~~ ~~The paramount importance local government accords sales tax revenue places a premium on tax generating retail business rather than on wealth-generating basic industry.~~ State fiscal reform--including curbing state government's ability to hijack local school and transportation funds--is most urgent. At the local level, de-emphasis of sales tax is needed.

It is the responsibility of SCAG and other regional organizations, in cooperation with regional businesses, to ~~achieve~~ facilitate buy-in at the subregional, city, and county levels to the need for

expanding the region's economic base. City management and . . . local elected officials must become active partners in the regional economic strategy.

Economic Policy in the 2004 Regional Transportation Plan

"The 2004 RTP boosts regional employment economic vitality through transportation infrastructure investments funded through the private sector and backed by user fees . . . This regional strategy, if successful, will become a powerful economic development tool that will generate jobs, increase per capita wealth and restore economic competitiveness and social equity. In the long run, private sector infrastructure investments can revitalize the SCAG Region's economy and enhance its global economic position . . . Moreover, the economic benefits from private investments of this magnitude will not be confined to the SCAG Region; positive State and national economic impacts will also be generated."

The fuel excise tax rate should be adjusted to maintain historical purchasing power. Further, fuel tax revenue needs to be maximized through pay-as-you-go and debt financing. Pursue user-fee supported project financing for major regional investments where applicable. Public-private partnerships are desirable because they conserve public funds for other uses. With such partnerships, the cost of building transportation infrastructure is borne by those who benefit most directly—the users of the facilities.

Economic Policy in the Southern California Goods Movement Policy Paper

Background

One-third of all waterborne freight container traffic at U.S. ports is handled by the Ports of Los Angeles and Long Beach. Fifty to seventy percent of the freight coming into these two ports is headed for destinations outside the region . . . Southern California provides these services to the nation while enduring substantial local burdens, including traffic congestion, air pollution, noise, public health impacts, visual blight, and freight-related safety incidents. These burdens are not compensated, thus forming an effective subsidy for lower-priced goods in other states . . . The national purpose served by Southern California's goods movement system points to the need for strong federal assistance in addressing the problem.

The federal government should explore ways to compensate the region for the services it provides, and should take legislative action to allow the region to pursue innovative funding strategies to build the needed infrastructure.

Improvements to the goods movement system should not come at the expense of other transportation system investments . . . Other sources of public and private funds must be tapped (homeland security, environmental protection, defense funds, user fees, and growth in customs fees, among others). The freight logistics industry is an important provider of jobs in the region. It employs more than 600,000 people, or 8 percent of total regional employment. SCAG's projections show that the industry will almost double its employment size by 2030, reaching more than one million jobs, representing 10 percent of total regional employment.

Given current limits on local and state finances, innovative methods will be needed to procure and pay for these system improvements. Both the Federal and State governments must act to support innovative procurement and public-private funding mechanisms. Policy makers have the responsibility to enhance innovative financing opportunities so that public funds can better support critical goods movement projects. ~~(Note: The Goods Movement Policy Paper contains a list of innovative financing arrangements that involve local borrowers and the state and federal governments. While these are not strictly economic policy measures they are included here because they involve financial activities that are related.)~~

Three types of initiatives are currently being implemented by public and private sector goods movement stakeholders in southern California:

- Operating enhancements
- Environmental mitigations/enhancements, and
- System/physical enhancements.

Each category includes both short-term actions – generally, those that will have an effect immediately, or within about the next five years – and longer-term actions.

RCP Task Force General Comments on Goods Movement Policy

Goods movement: how do we make it work? Some see increased goods movement resulting in less wealth at the cost of large air quality impacts, etc. Impacts of ports are felt on a number of freeways (e.g., 710, 110). Are such effects sustainable? How do we reduce impacts on those who don't see offsetting wealth benefits? Bottom line for many is: "how big is big enough?"

Southern California Compass: Growth Visioning and Economic Policy

Background

Among the strategies and principles for managing growth crafted by the Growth Visioning Subcommittee the ones most relevant to economic policy are Mobility, Prosperity, and Sustainability. Much of what the Compass project has to say in these areas is covered in the revised overarching theme statement and the sections above, but it may be worthwhile to rephrase it in Growth Visioning terms.

Under "**Mobility**" the following recommendations appear:

- Encourage transportation investments and land use decisions that are mutually supportive.
- Locate new housing near existing jobs and new jobs near existing housing.

The "**Prosperity**" principle is stated as "Enable Prosperity for all people." ~~virtually the same as statement #2, above, from the Economy chapter of the RCP&G.~~ Under this principle we find:

- Provide in each community a variety of housing types to meet the needs of all income levels.
- Support local and state fiscal policies that encourage balanced growth.

The "**Sustainability**" principle has to do with accommodating growth while avoiding development of sensitive open space resources. Sustainability includes:

- Developing strategies to accommodate growth that use resources efficiently, eliminate pollution, and significantly reduce waste; and
- Focusing development in urban centers and existing cities.

REPORT

DATE: July 25, 2005

TO: Regional Comprehensive Plan Task Force

FROM: Jennifer Brost, AICP, Associate Regional Planner
213-236-1829, brost@scag.ca.gov

SUBJECT: Energy Chapter of the Regional Comprehensive Plan

RECOMMENDED ACTION:

- Provide input to staff regarding the Preliminary Draft Energy Chapter of the Regional Comprehensive Plan.
- Recommend that the Energy and Environment Committee release the Preliminary Draft Energy Chapter for public review.
- Provide input on the formation of an ad hoc energy working group.

SUMMARY:

Staff has prepared a preliminary draft Energy Chapter for the Task Force's consideration at this time. The Preliminary Draft Energy Chapter is currently structured as an action plan, identifying recommended actions for the federal government, state legislature, and jurisdictions. The Chapter also describes the current conditions including energy generation and use.

At this time, the Chapter should not be considered final as updates and additions are anticipated. Specifically, the "Current Conditions" section will be revised and updated, as new information becomes available. Pending approval by the Task Force and the Energy and Environment Committee (EEC), staff will release this preliminary draft to the public, and undertake further activities to refine and complete the chapter.

As directed by the EEC on July 7, 2005, staff is in the process of developing a forum to discuss energy policy in depth. Staff is soliciting input from the RCP Task Force on the make-up and the outcomes for the proposed energy working group.

BACKGROUND:

At the December 15, 2004 RCP Task Force meeting, the Task Force directed staff to complete a report to the Energy and Environment Committee on issues pertaining to the Energy Chapter. The Task Force identified a regional policy deficiency related to energy generation, and instructed staff to report back when a draft of the Chapter reflecting Task Force discussions was completed.

Staff subsequently reported to the EEC in February 2005. Committee members suggested the Energy Chapter consider alternative forms of energy conversion, energy transmission, and distribution. Staff committed to plan energy workshops comprised of elected officials and industry leaders to garner ideas and reach consensus. A workshop took place on April 29th to gather recommendations for developing a regional energy generation policy. Subsequently, on July 7, 2005, the EEC approved the recommended policies related to generation, supply, conservation, cogeneration and transmission. These policies have been included in the preliminary draft Energy Chapter presented today.

On July 7, 2005, the EEC also directed staff to recommend a forum that would address energy policy in depth. Staff has subsequently considered the formation of an ad hoc energy working group with well-defined short-term and long-term goals. The makeup of the proposed task force is still under consideration, however the RCP Task Force would be invited to participate.

As a short-term goal, it is anticipated that the ad hoc energy working group will focus on the current (2005-2006) fiscal year effort of developing outcomes. The outcomes will generally consist of quantifiable benchmarks to measure energy generation, supply, and consumption. SCAG will build upon its current relationships with energy providers such as Southern California Edison and the Los Angeles Department of Water and Power and long-range energy planners such as the California Public Utilities Commission and the California Energy Commission, as well as other organizations in the region.

ATTACHMENTS:

- Preliminary Draft Energy Chapter of the Regional Comprehensive Plan

This Energy Action Plan, as presented, is preliminary and has not been subject to formal approval of the SCAG Regional Council or any Committee. The action plan is based on the discussions of the RCP Task Force and is being made available at this time for information and for suggestions.

Preliminary Draft Action Plan for Energy Chapter

INTRODUCTION

The energy action plan identifies policy and practice that SCAG endorses for external parties and itself. While the actions included here are advisory, SCAG will refer to its recommended practices in administering Inter-Governmental Review as authorized by CEQA. The action plan includes items identified as mitigation in the Program Environmental Impact Report for the 2004 Regional Transportation Plan (RTP).

The action plan, as with other RCP chapters, is organized according to the implementing party. As such, there is a recommended actions section for the Federal Government, State Government, SCAG and other regional agencies, and local governments.

California's recent energy crisis brought energy to the forefront of public policy issues. These issues can be summarized as 1) meeting the immediate energy demands, and 2) planning and developing the energy infrastructure necessary for servicing future population growth and energy requirements.

Meeting immediate demands is problematic in that existing supply and demand for petroleum is resulting in significantly high retail prices. In addition, in 2000, there were electricity price spikes and rolling blackouts. Energy conservation provides the most immediate benefit at the regional/local level.

Meeting future needs will be challenging. The energy needs necessary to serve the additional six million people forecast for the region will be substantial. This is especially true if high-energy projects will be required, such as Magnetic Levitation High Speed Rail trains and seawater desalinization plants.

In 2004, SCAG's Regional Council created a clear set of objectives and goals related to the future growth of the region and formalized them in the Compass Growth Vision and the Regional Transportation Plan. The growth vision calls for accelerated growth in key strategic areas that are beneficial to energy conservation, such as transit oriented development along major corridors. The vision for future growth and development is described in full in the Land Use and Housing Chapter of this plan.

This chapter presents energy policies adopted by the Southern California Association of Governments' (SCAG) Regional Council and are referenced in the action plan and are appended as well. It also contains data on electricity, natural gas, and petroleum fuel production and consumption for the SCAG region and the state.

The Indicators Section includes performance indicators to show how the region is progressing toward its policy goals and relates the region's progress on energy issues to the Regional Council's Growth Vision principles:

This Energy Action Plan, as presented, is preliminary and has not been subject to formal approval of the SCAG Regional Council or any Committee. The action plan is based on the discussions of the RCP Task Force and is being made available at this time for information and for suggestions.

SCAG POLICIES REGARDING ENERGY

The SCAG Regional Council, through resolutions and adoption of major planning and policy documents, has established policies regarding energy. The overarching policy for energy is one of sustainability. The Regional Council, through its 2004 Growth Vision, recognizes that energy production and consumption must be sustainable in order to manage natural resources efficiently and in order to protect the environment today and in the future. The overarching energy policy is to:

- *Develop strategies to accommodate growth that use resources efficiently, eliminate pollution, and significantly reduce waste.* - SCAG Growth Vision, Policy 72

To reduce the overall consumption of fossil fuels, particularly petroleum, SCAG policies encourage the use of alternative fuel vehicles and transit:

- *Encourage local jurisdictions to purchase alternative fuel vehicles, support the installation of refueling infrastructure, planning, education, and outreach to promote alternative fuel vehicles, support the development of legislation, programs, funding, and technology which addresses clean fleets and alternative fuels.* - SCAG Resolution 145

- *Encourage investment in transit.* – SCAG Growth Vision, Policy 72

SCAG enacted policies to show their support for clean energy generation in an effort to develop sustainable energy generation and to develop the power plants in an environmentally sustainable way.

- *Encourage cost-effective alternative and renewable energy generation facilities* [proposed policy]

- *Encourage reliable energy through the diversification of sources* [proposed policy]

- *Oppose current power plant projects at the US-Mexico border, until California Best Available Control Technologies are installed and maintained on all power plants along the border.* - SCAG Resolution 144

- *Support only the use of the best available technology including monitoring, air, and water impacts for locating any nuclear waste facility.* – SCAG Resolution 148

SCAG is required to implement the mitigation measures listed in its Mitigation, Monitoring, and Reporting Program of the 2004 Regional Transportation Plan (RTP) Program Environmental Impact Report (PEIR). The mitigation measures are part of the Action Plan. Mitigation measures addressing energy include:

- *Work with local jurisdictions and energy providers, through [SCAG's] Energy and Environment Committee and other means, to encourage regional-scale planning for improved energy management. Future impacts to energy shall be minimized through cooperative planning and information sharing within the SCAG region. This cooperative planning shall occur during the update of the Energy chapter of SCAG's Regional Comprehensive Plan and Guide.*

- *Encourage state and federal lawmakers and regulatory agencies to pursue the design of programs to either require or incentivize the expanded availability and use of alternative-fuel vehicles to reduce the impact of shifts in petroleum fuel supply and price.* – SCAG EIR Policy 171

RECOMMENDED ACTIONS

Actions For The Federal Government

SCAG strongly encourages the federal government to develop a long-term plan to reduce the dependence on fossil fuels, the majority of which are used for transportation. Conservation and research into alternative fuels may provide significant long-term solutions. (Policy Reference: 1996 RCP EIR 171; Growth Vision 79, Resolution 145)

- Promote Federal legislation/regulations promoting increased vehicle fuel efficiency standards.
- Maintain or increase funding for HOV lanes and promotion of carpooling.
- Encourage elected officials to actively promote carpooling
- Increase the funding available for transit programs under the Highway Trust Fund.
- Develop a national consensus on alternative fuel research and development.
- Provide incentives for local units of Federal agencies to adopt alternative vehicle fleets to promote alternative fuel infrastructure development.

SCAG strongly encourages the federal government to provide incentives for the construction of energy efficient commercial and residential buildings. (Policy Reference: Growth Vision 72)

- Encourage the public and private sectors to use energy efficient materials in building design, construction, rehabilitation and retrofit. [proposed policy]

Encourage cost-effective alternative and renewable energy generation facilities [Proposed Energy Generation Policy]

- Promote tax incentives for the commercial/domestic alternative energy generation, such as solar power and wind turbines.

Encourage reliable energy through diversification of sources. [Proposed Energy Generation Policy]

- Encourage cogeneration, where feasible and cost-effective.

Actions for the State Legislature

Encourage cost-effective alternative and renewable energy generation facilities [Proposed Energy Generation Policy]

- Maintain and expand Solar Energy Rebate Program
- Promote Solar Energy Technology development

Encourage cogeneration, where feasible and cost-effective [proposed policy]

- Provide incentives to increase the use of cogeneration technologies.

SCAG strongly encourages the State of California to continue to support alternative fuel vehicle incentives and research. (Policy Reference: EIR 171, Resolution 145)

- Provide incentives for state and local governmental bodies to adopt alternative vehicle fleets.
- Adopt alternative fueled vehicles for government fleet cars throughout the nation.
- Maintain and expand incentives for populace to purchase and use alternative fuel vehicles (e.g. carpool lane usage)
- Provide preferred "Reserved for Alternative Fuel Vehicle" parking locations at state buildings.

SCAG strongly encourages the State of California to promote fuel conservation (Policy Reference 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 79)

- Promote public awareness campaigns on carpooling and transit ridership
- Promote preferred parking spaces for carpools at State office buildings
- Provide subsidies for carpooling and transit ridership
- Promote public awareness campaigns on carpooling and transit ridership
- Incorporate schools into the “Flex Your Power” public awareness program.

Encourage the public and private sectors to use energy efficient materials in building design, construction, rehabilitation and retrofit. [proposed policy]

- SCAG strongly encourages the State of California to continue providing incentives for commercial and residential energy conservation purchases:
    - Provide state tax rebates to low income households (and landlords for low-income housing) who purchase efficient appliances.

- Provide informational items promoting the California Home Energy Efficiency Rating System (CHEERS)

SCAG strongly encourages the State of California to promote, through advocacy or regulation, environmentally efficient structures (Policy Reference: GV 72)

- Require new government buildings be built according to a minimum threshold on the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.
- Require minimum LEED standards for all commercial/residential building construction.
- Advocate the use of natural cover (roof top trees/shrubs) to reduce urban heat sink phenomenom.

Encourage greater coordination between the California Public Utilities Commission and Independent Service Operator. [Proposed Energy Policy]. In the same context, greater coordination between municipal utilities and the Independent Service Operator could help to reduce the balkanization of the grid.

Encourage increasing capacity of existing transmission lines [where feasible, proposed policy]

Actions for SCAG and Regional Agencies

SCAG has no policy on energy conservation. There are policies related to air quality and transportation that have the same effect as conservation, as it relates to congestion mitigation, (Policy Reference 14, 15, 16, 17, 18, 19, 20, 21, 22, 23) but not static energy usage (lighting, heating, etc.).

A proposed energy conservation policy is to "Encourage the public and private sectors to use energy efficient materials in building design, construction, rehabilitation and retrofit." [proposed policy]

- SCAG strongly encourages local governments to continue providing incentives for commercial and residential energy conservation purchases:
    - Provide state tax rebates to low income households (and landlords for low-income housing) who purchase efficient appliances.
    - Provide informational items promoting the California Home Energy Efficiency Rating System (CHEERS)
    - Require new government buildings be built according to a minimum threshold on the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.
    - Require minimum LEED standards for all commercial/residential building construction.
    - Advocate the use of natural cover (roof top trees/shrubs) to reduce urban heat sink phenomenom.

SCAG has no regional energy generation policy. Any regional energy policy that is developed should be consistent with other regional policies, including environmental policies. Proposed SCAG energy generation policies include:

- Encourage cost-effective alternative and renewable energy generation facilities
- Encourage reliable energy through a variety of sources
- Encourage greater coordination between the California Public Utilities Commission and Independent Service Operator

SCAG will continue to advocate for greater vehicle occupancy (Policy Reference: GV72)

- Advocate for dedicated preferred designated parking for carpools at government buildings and businesses.
- Promote public awareness campaigns on carpooling and transit ridership
- Promote preferred parking spaces for carpools at regional office buildings
- Promote public awareness campaigns on carpooling and transit ridership

SCAG will continue to advocate and plan for regional transit solutions to transportation problems. (Policy Reference: GV79)

SCAG will promote the use of alternative fuel vehicles. (Policy Reference: EIR 171)

- Advocate that local governments allow electric/alternative fuel vehicles to park at metered parking spots at no charge (any applicable time limitation would still apply).

SCAG will continue to work with local jurisdictions, the California Energy Commission and energy providers to develop state energy guidelines based on projected demand and supply. Developing State guidance with local and regional input will build a consensus for energy action across the state. (Policy Reference: EIR 172)

- Regional Planning Agencies work with CEC to develop energy demand and supply forecasting methodology.
- Distinguish energy generation and consumption for the built environment and that for transportation purposes.
- Develop data on the implications of energy usage, especially on emissions of toxic air contaminants and greenhouse gases and possibly for other environmental issues, such as water quality.
- Support state and local efforts to better coordinate demand side management programs and the development of overall energy policies and goals.
- Develop regional energy performance indicators and goals for those indicators.
- Investigate the potential benefits to the region from encouraging distributed energy resources and combined heat, cooling, and power.

- Regional agencies monitor and provide input towards development of State energy projections.

Actions for Counties and Cities

SCAG strongly encourages local governments to purchase alternative fuel vehicles and develop the infrastructure necessary to support the vehicles.

- Local governments purchase alternative fuel vehicles for their fleet, where practical.
- Local governments develop a common infrastructure necessary to support these vehicles.
- Local governments work with SCAG and other governmental units to establish standards on alternative fuel technology and infrastructure.

SCAG strongly encourages local governments to continue providing incentives for commercial and residential energy conservation purchases:

- Provide incentives to low income households (and landlords for low-income housing) who purchase efficient appliances.
- Provide informational items promoting the California Home Energy Efficiency Rating System (CHEERS)
- Require new government buildings be built according to a minimum threshold on the Leadership in Energy and Environmental Design (LEED) Green Building Rating System.
- Require minimum LEED standards for all commercial/residential building construction.
- Advocate the use of natural cover (roof top trees/shrubs) to reduce urban heat sink phenomenom where practical.

Local Governments should monitor and provide input in the development of the State energy projections. (Policy Reference: EIR 172)

Local governments should review and update, as necessary, building retrofit ordinances for energy efficiency. (Policy Reference: RCPG 87, EIR 172)

SCAG's Compass Growth Vision program has identified 2% of the land in the SCAG region to focus land use and transportation investments in order to accommodate the forecast growth in the region to the year 2030. Governments can review this "2% Strategy" and ensure that energy policy is implemented in the areas of the 2% Strategy that fall within their jurisdictions. SCAG can promote the 2% Strategy to educate jurisdictions about the strategy and about ways to implement the strategy, at the same time incorporating energy policy into their plans. (Policy Reference 159, 160, 161)

Street Grids and Building Alignments

Land use can encourage the use of solar energy. New streets can be aligned to best utilize the energy provided by the sun. In turn, the position of new buildings on the street and the position of windows on a building can be aligned to maximize natural lighting.

- New development designs should encourage use of natural lighting and energy efficiency.

Increased Vehicle Occupancy

All levels of government can contribute to the implementation of this action. Local governments can encourage carpool and vanpool programs and adopt trip reduction ordinances. While many of the needed programs are in place, a local jurisdiction can enhance effectiveness by helping fund information and promotion campaigns, and construct preferential parking, among other items. Regional and state transportation agencies can provide for HOV lanes between communities. All levels of government can conduct public awareness campaigns to encourage increased vehicle occupancy.

- Local governments/local businesses dedicate preferred designated parking for carpools.
- Promote public awareness campaigns on carpooling and transit ridership.

Telecommuting

Local governments can encourage telecommuting by adopting telecommuting programs for their employees, allowing or encouraging local telecommuting centers through their general plan and land use regulations, and allowing or encouraging people to work at home through their home occupations ordinances. State and regional agencies can help implement telecommuting through information campaigns and by providing opportunities for their employees to telecommute. More specific implementation ideas include the provision of credits to employers subject to telecommuting provisions of a trip reduction ordinance and the organization of forums and workshops for local employers to explain the benefits of telecommuting.

- Local governments/local businesses should adopt telecommuting programs for employees.
- Local businesses can create “business kiosks” in areas where market demand exists for telecommuters to work and hold meetings.

Pedestrian and Bicycle Emphasis

Local governments could require an integrated system of pedestrian and bicycle paths, bike storage facilities, and shower facilities. More compact land use patterns, especially involving mixed uses, would also assist in this action. Although local governments assume primary power to implement this measure, regional agencies, especially those responsible for transportation and air quality, could encourage local governments to adopt programs that support bicycle ridership and pedestrians. Regional agencies also could coordinate the efforts of cities and counties to assure a regional system. To assist in the implementation of the measure, the following strategies could be considered:

- appointment of a bicycle/pedestrian coordinator or advocate,
- amendment of subdivision ordinances to require pathways and/or a system of paths,
- development and distribution of regional maps that clearly illustrate bicycle and pedestrian systems.
- Local governments should encourage the incorporation of bicycle/pedestrian paths in new development areas through incentives or regulations.
- Local governments should encourage the use of pedestrian friendly designs in new construction and urban redevelopment
- Regional agencies should work with local governments to coordinate and integrate a region wide bicycle path system.

Transit and Land Use Emphasis

There is potential for energy savings from increased transit facilities within a pattern of compact, mixed use, transit oriented development. A range of public agencies should implement this measure. SCAG's 2% Strategy encourages growth around transit stations, and advocates for easy access to the stops and stations. Related implementation strategies include coordination with transit agencies to pursue joint development projects, including housing, adjacent to transit; provision of zoning incentives, including density bonuses; and adoption of specific plans around rail stations and transit centers.

- Local governments should encourage transit oriented development

Congestion Pricing

This action charges a toll to use certain roads during certain parts of the day. The tolls are usually imposed in central business districts. The most prominent example of congestion pricing is in downtown London in the United Kingdom. Tolls will produce side effects that must be understood by all agencies in advance of their imposition. The tolls can be imposed by the state or by operators of private roads or bridges.

- Regional/local governments should examine the use of congestion pricing in heavily congested central business districts.

Parking Pricing

- Allow electric vehicles to park at metered parking spots at no charge (time limitations would still apply).
- Local governments establish a formula for the maximum number of parking spaces for each square foot of office space.
- Local businesses can establish peak hour parking pricing.
- Local businesses can establish higher short term parking rates (subsidized by validation from local retailers).
- Local governments/local businesses can provide reduced parking fees for carpools.

Energy Efficient Landscaping and Site Design

- Local governments develop conservation guidelines for new construction.
- Local governments develop conservation manuals for homeowners and local landscape contractors/architects.
- Building industry develops guidelines for energy efficient landscaping in new construction.

Public Awareness Campaigns

- Local governments develop Public Awareness campaign strategies customized to their local communities.
- Local, regional and state agencies coordinate public awareness campaigns for maximum effectiveness.
- Provide Public Awareness campaign for California Home Energy Efficiency Rating System.
- Promote public awareness campaigns on carpooling and transit ridership.

State Energy Supply Planning

Regional and local governments could take a more active role in the statewide energy planning process. Regional and local governments should monitor the development of the State energy projections.

- Regional/Local governments should participate in the statewide energy planning process
- If unable to participate, Regional/Local governments should monitor and comment on the development of state energy plans and projections.

Energy Scorecards and Best Practices Lists

Governments can set thresholds for energy efficiency and energy savings through energy scorecards. Similar to the energy scorecards, government agencies can develop energy checklists for developers that detail best practices that can be taken to build energy efficient products.

- Promote development regulations and design standards to maximize energy efficiency and minimize potential health risks.

CURRENT CONDITIONS

Energy price increases and rolling blackouts in 2000 caught many off guard about the seriousness of the State's energy supply issues. In 1996, the state legislature passed Assembly Bill 1890, restructuring the electricity market. Initially, the market appeared to function well, but by 2000, electricity demand in the state began to catch up with supply. This increased demand, combined with other factors, resulted in price spikes and rolling blackouts. Even after some reforms, current electricity reserves will be insufficient to meet an abnormal hot summer (considered once every ten years)[1].

Another energy planning challenge is to consider the context of regional growth visioning. The addition of six million new residents by 2030 will result in increased land-use development and its associated energy demands. The increasing use of electronics in business, home and personal entertainment devices will place new demands on the capacity, demand and distribution of energy in the SCAG region.

Government activities to support the 2030 population projections will also increase energy demand. The use of Magnetic Levitation technology for high speed rail will increase electrical demand. The use of desalinization plants to provide potable water to residents will also require substantial energy resources.

Energy planning for 2030 will be challenging. As a by-product of market restructuring, less energy data is available and less planning is performed, since in theory, market forces will "plan" our energy requirements. Before AB 1890, the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC) collaborated in forecasting power demand and supply. The process is now different, and the CEC forecasts only 10-12 years into the future, despite the fact that oftentimes energy infrastructure takes longer to plan and develop. Investor-owned utilities also scaled back their energy forecasting efforts, though they still conduct business planning on various time horizons.

In addition, California imports 34% of the petroleum that is processed in its refineries from foreign countries. Continued oil price fluctuation has helped to bring forward concerns about American dependence on petroleum and has renewed national and state interest on energy policy.

<u>Energy Sources</u>

Electricity is produced in several different ways. Natural gas is used to produce electricity as well as to heat homes and water. Petroleum (oil) consumption in California is used primarily for transportation purposes. Various types of renewable energy production are in use and are being further developed to meet more of the state's energy demand. This section describes current energy consumption patterns in the SCAG region and the state.

[1] California Energy Commission, Summer 2005 Supply-Demand Update, Joint Agency Meeting, March 23, 2005, http://www.energy.ca.gov/energy_action_plan/meetings/2005-03-23_meeting/2005-03-23_ASHUCKIAN.PDF accessed June 13, 2005.

Electricity

Natural gas is used to supply the largest percentage of electricity in California. Combined with natural gas, the energy sources of coal, large hydrologic systems, and nuclear power provide 90% of the energy to make electricity in the state. Only 10% of electricity in the state comes from renewable energy sources such as geothermal, biomass, small hydrologic projects, wind, and solar sources. Power generation by type can be seen in Table 1, below:

Table 1: California Gross System Power for 2004 (In Gigawatt-Hours)

Fuel Type	In-State	Northwest Imports	Southwest Imports	Gross System Power (GSP)	GSP Percentage
Natural Gas	104,858	1,926	8,400	115,184	41.90%
Coal	28,589	5,154	20,760	54,503	19.80%
Large Hydro	29,667	9,560	1,445	40,672	14.80%
Nuclear	30,241	786	4,467	35,494	12.90%
Renewables	29,238	-0-	-0-	29,238	10.60%
Geothermal	13,571			13,571	4.90%
Biomass	5,997			5,997	2.20%
Small Hydro	4,669			4,669	1.70%
Wind	4,258			4,258	1.50%
Solar	743			743	0.30%
TOTAL	251,831	17,426	35,072	304,329	100.00%

Source: California Energy Commission. 2004 Net System Power Calculation Report, Energy Commission Publication # CEC-300-2005-004. Accessed June 13, 2005, from http://www.energy.ca.gov/electricity/gross_system_power.html

The Southern California Edison Company delivers 69% of the retail electricity sales to residents and businesses in the SCAG region. The Los Angeles Department of Water and Power delivers 20% of the region's electricity, and a number of small municipal utilities deliver the remaining 11% of the electricity.[2]

Different sectors of the economy use different amounts of electricity. The commercial sector uses the most electricity in California, followed by the residential and then the industrial sector. Agricultural, mining, and other users account for only 16% of the electricity consumed in the state[3].

The SCAG region consumed 46% of the electricity in the state in 2001. The percentage of consumption by individual sectors follows the same pattern as the state. Commercial, residential, and industrial users consume 87% of the electricity in the region, with the remaining 13% consumed by agricultural, mining, or other uses.[4] The following pie chart shows the distribution of electricity consumption, by sector, for the SCAG region in 2001.

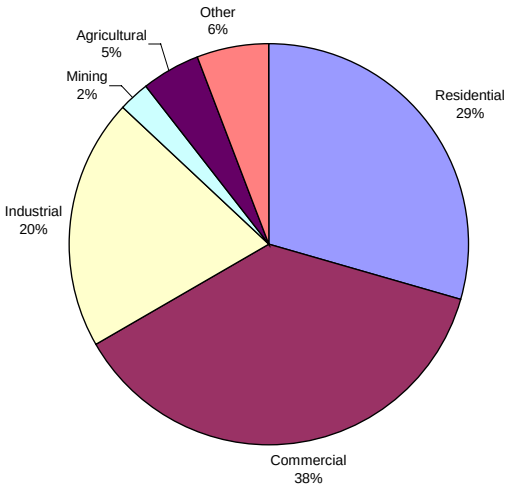
[2] Source: *California 2001 Electric Utility Retail Deliveries.* http://www.energy.ca.gov/electricity/utility_electric_sales_2001.xls accessed August 3, 2004

[3] Source: California Energy Commission. (August 2003). *California Energy Demand 2003-2013 Forecast*.

[4] Source: California Energy Commission. (August 2003). *California Energy Demand 2003-2013 Forecast*.

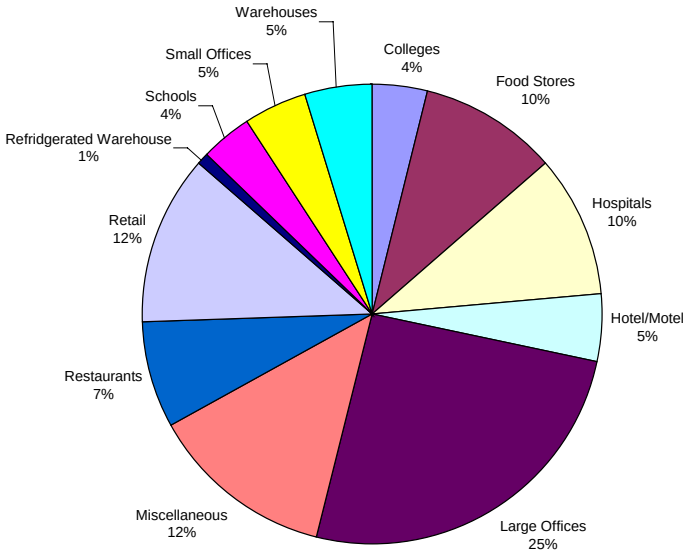
This Energy Action Plan, as presented, is preliminary and has not been subject to formal approval of the SCAG Regional Council or any Committee. The action plan is based on the discussions of the RCP Task Force and is being made available at this time for information and for suggestions.

Percentage of Electricity Consumption by Sector, SCAG Region, 2001



Large offices consume 25% of the electricity used in the commercial sector. Other commercial uses that account for at least 10% of the electricity used include retail, miscellaneous uses, food stores, and hospitals. Colleges and schools combined account for 8% of the commercial electricity use. Warehouses, including refrigerated warehouses, account for 5% of the electricity used. The pie chart below depicts the percentage of commercial energy used by different types of commercial establishments.

Percentage of Commercial Electricity Consumption by End Use, SCAG Region, 2001



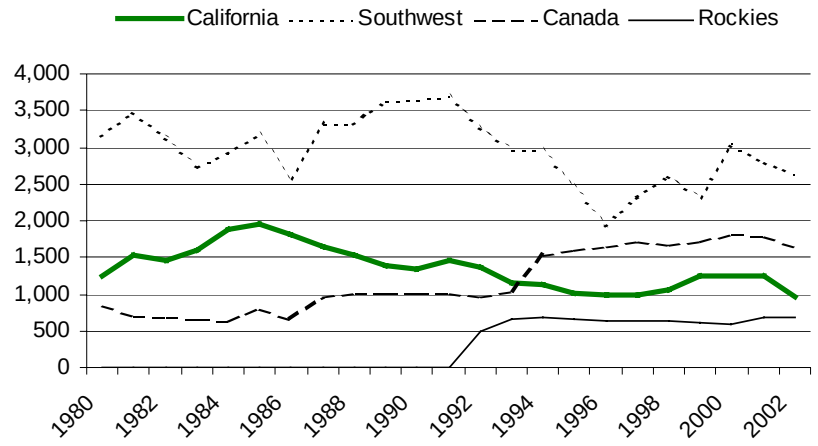
Natural Gas

Natural gas supply and demand data are compiled by the state's natural gas utilities in the annual California Gas Report. The SCAG region is served primarily by the investor-owned Southern California Gas Company, a unit of Sempra Energy. A small portion of the region is served by a municipal gas utility, Long Beach Energy (part of the City of Long Beach).

Californians consumed almost 6 billion cubic feet per day of natural gas in 2002. California produced only 16% of this daily amount, leaving the state to rely on other sources to meet the large majority of the state's needs. Imports came from the Southwestern United States (44%), Canada (28%), and the Rocky Mountain region of the United States (12%). Since 1994, California began to rely on natural gas from Canada and the Rocky Mountains region and has seen both the physical amount and the percentage produced within California as well as imported from the Southwest decrease. Natural gas consumption within the state has increased 13% from 1980 to 2002.

California Natural Gas Supply By Source

(In MMcfd - Millions of Cubic Feet / Day)



Notes: California is net California on and offshore production.

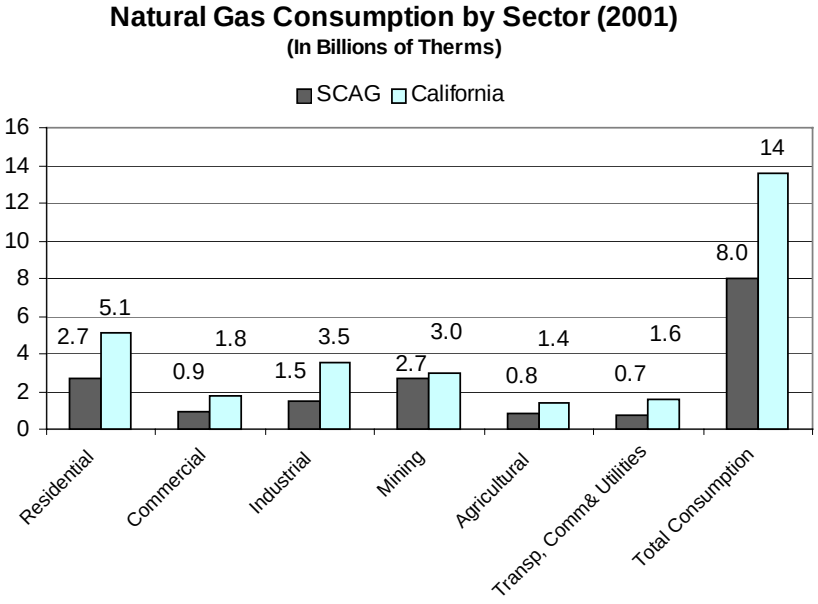
Southwest is natural gas delivered to California by El Paso Natural Gas Company, Mojave Pipeline Company, Transwestern Pipeline Company, and Southern Trails Pipeline Company.

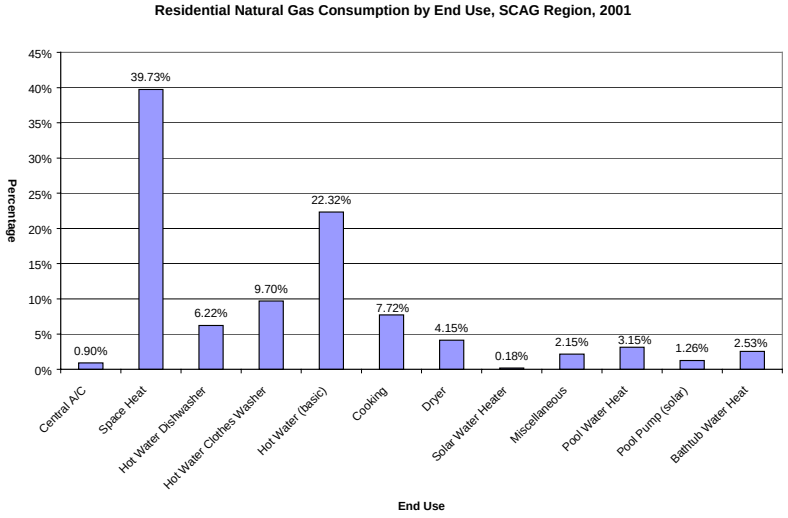
Canada is natural gas delivered to California by Pacific Gas Transmission Company.

Rockies is natural gas delivered to California by Kern River Transportation System.

Source: California Gas Reports, FERC Form 2, QFER Form 6a and 10a, California Department of Conservation, Division of Oil and Gas - Annual Report of the State Oil and Gas Supervisor. Accessed August 16, 2004, from http://www.energy.ca.gov/naturalgas/statistics/gas_supply_by_source.html

The most recent data (as shown in the below chart) show that the residential sector uses the largest amount of natural gas, both across the state and in the SCAG region. In 2001 and 1990, the mining sector used the second most amount of natural gas in the SCAG region. Statewide, it was the industrial sector using the second most amount of natural gas. The commercial sector falls behind residential, mining, and industrial uses. Agricultural and transportation, communications, and utilities sector industries are the other sectors using natural gas. These two sectors individually account for only 1% of the natural gas use.[5]





[5] Source: Southern California Gas Company. *Southern California Gas Report 2004*.

The natural gas used in the residential sector primarily is used to heat houses or water. The two uses that consume the largest percentage of natural gas are space heat and hot water. Natural gas is also used to heat the water for washing machines, dishwashers, and swimming pools. Natural gas used for cooking purposes ranks fourth in terms of residential uses for natural gas.

Alternative Energy Sources

Electricity supply reliability depends, in part, on the diversity of energy sources. In 1978, congress passed the Public Utilities Regulatory Policies Act (PURPA). The act defines facilities that use alternative or renewable energy sources as "qualifying facilities." It provides financial incentives for their installation and requires utilities to sign long-term power purchase contracts with qualifying facilities. The CPUC has adopted contract incentives to assist qualifying facilities.

Qualifying facilities built in the SCAG region include wind and solar installations in Riverside and San Bernardino Counties and a number of cogeneration units around the region. Original provisions of PURPA encouraged the construction of biomass-to-energy facilities, which use materials such as agricultural and wood waste as fuel for energy production. However, changes to the law sharply reduced the number of biomass-to-energy facilities in the state and the amount of power provided.

Cogeneration provides the most megawatts of energy from qualifying facilities for Southern California Edison with over 2,000 megawatts under contract. Wind is the second largest source for energy from qualifying facilities with over 1,100 megawatts. Southern California Edison's energy from qualifying facilities is presented below.

Southern California Edison Energy from Qualifying Facilities	
Technology	**MegaWatts Under Contract**
Cogeneration	2,260
Wind	1,113
Geothermal	946
Solar	379
Biomass	309
Small Hydro	95
Total	5,102
Source: Southern California Edison Company. (30 July 2004). *QF Resources: Qualifying Facilities Semi-Annual Status Report to the California Public Utilities Commission*.	

Cogeneration / Combined Heat and Power

Smokestacks are synonymous with fossil fuel burning energy plants. Cogeneration captures a portion of the heat energy lost through the smokestack to create power. Cogeneration means that the useful thermal energy produced as a by-product is captured at the same time electrical power is produced. This practice can increase the efficiency of

energy production from approximately 33% to over 70%, with clear environmental benefits.[6]

There are several national and regional partnerships that promote cogeneration. The U.S. Environmental Protection Agency's (EPA) Combined Heat and Power (CHP) Partnership is "a voluntary program that seeks to reduce the environmental impact of power generation by fostering the use of cogeneration."[7] This partnership is designed to foster cost-effective cogeneration projects throughout the country.

In California and the western United States, there is the Pacific Southwest Combined Heat and Power Initiative. The mission of this initiative is to "coordinate a public/private interaction whose objective is to increase the development and use of cost-effective and environmentally preferred combined cooling, heating and power technologies throughout the pacific southwest region, including California, Arizona, Nevada, Hawaii."[8] The Initiative works to outreach to the general public and legislative bodies, to increase installed cogeneration capacity in the southwestern United States, to remove utility barriers to cogeneration, to develop state-level policies and regulations that give incentives and preferred treatment for cogeneration systems, technology and cogeneration "packaged-system" development, and to establish interstate collaboration.

There also is the Pacific Region Application Center that assists firms "to locate, design and implement economically viable distributed energy projects that make appropriate use of their recoverable waste heat."[9] These national and regional initiatives all promote increasing the efficiency of existing power plants and capturing more of the energy being produced at power plants.

Wind

Wind energy in the SCAG region is produced in the San Gorgonio Pass near Palm Springs in Riverside County. Other major areas for wind energy facilities in the state are located in the Altamont Pass east of San Francisco and in Tehachapi near Bakersfield.

Geothermal

Southern California Edison has 946 megawatts of geothermal energy under contract. Geothermal energy comes from underground reservoirs of steam, hot water, and hot dry rocks. Hot water or steam extracted from geothermal reservoirs in the Earth's crust is supplied to steam turbines at electric utilities that drive generators to produce electricity.[10] The California Energy Commission's Geothermal Program was created by

[6] Southern California Association of Governments (SCAG). (June 2002). Regional Comprehensive Plan and Guide Energy Chapter Update 2002. Los Angeles: SCAG.
[7] U.S. Environmental Protection Agency. (26 Oct. 2004). Combined Heat and Power Partnership. Accessed November 17, 2004, from http://www.epa.gov/chp/index.htm.
[8] Pacific Southwest Combined Heat and Power Initiative. (n.d.) The Pacific Southwest CHP Initiative. Accessed November 17, 2004, from http://www.pswchpi.org/index2.aspx.
[9] Pacific Region Application Center. (n.d.). Mission Statement. Accessed November 17, 2004, from http://www.chpcenterpr.org/Mission/Index.aspx.
[10] U.S. Department of Energy. (6 January 2004). Geothermal Energy. Accessed November 17, 2004, from http://www.eia.doe.gov/cneaf/solar.renewables/page/geothermal/geothermal.html.

Assembly Bill 1905 (Bosco) and has been in operation since 1981.[11] The program promotes geothermal research and development of geothermal energy production in California.

Solar

Southern California Edison has 379 megawatts of solar energy under contract. The California Energy Commission has had a Solar Energy and Distributed Generation Grant Program to incentivize the installation of solar energy systems in private residences. The program currently does not have funding in the State budget. While solar energy have start up costs to install, they are a source of readily available, clean, and renewable energy for southern California that will more than pay for themselves over a period of years.

Biomass / Biofuels

As discussed under qualifying facilities, biofuels and biomass are alternative energy sources that can be developed to reduce the dependence on energy from fossil fuels. The U.S. Department of Energy's Biomass Program lauds biomass and biofuels because biomass use "strengthens rural economies, decreases America's dependence on imported oil, avoids use of MTBE or other highly toxic fuel additives, reduces air and water pollution, and reduces greenhouse gas emissions."[12] Nationwide in 2003, biomass was the leading source of renewable energy, accounting for 47% of the renewable energy produced in the United States and 4% of the total energy produced within the States.[13] There are 26 biomass-to-energy plants operating in California, with a total generating capacity of 550 MW.[14] Southern California Edison has 309 MW of biomass under contract within the SCAG region.

Small Hydroelectric

Small hydroelectric facilities provide 95 megawatts of energy to Southern California Edison under their qualifying facilities contract. Large hydroelectric facilities provide a major source of power in California. These large facilities are operated by the federal government's Bureau of Reclamation and the state government's Department of Water Resources and are located on dams in the state.[15] Power utilities such as Southern California Edison operate the smaller hydroelectric facilities in the state.

Conversion Technologies

The concept of conversion technologies is to take waste that would otherwise be discarded into landfills and use them in a productive way to create energy and allow for the conservation of other resources. Besides incineration, other types of conversion technologies include:

---

[11] California Energy Commission. (9 September 2004). Energy Commission Geothermal Program. Accessed November 19, 2004, from http://www.energy.ca.gov/geothermal/.

[12] U.S. Department of Energy. (27 Oct. 2004). Biomass Program. Accessed November 16, 2004, from http://www.eere.energy.gov/biomass/.

[13] U.S. Department of Energy. (3 Nov. 2004). Biomass Today. Accessed November 16, 2004, from http://www.eere.energy.gov/biomass/biomass_today.html.

[14] California Integrated Waste Management Board. (4 Feb. 2004). Biomass to Energy. Accessed December 9, 2004, from http://www.ciwmb.ca.gov/Organics/Conversion/BioEnergy/.

[15] California Energy Commission. (22 May 2001). Hydroelectric Power in California. Accessed November 19, 2004, from http://www.energy.ca.gov/electricity/hydro.html.

- Anaerobic Digestion: Anaerobic digestion is a biological process that produces a gas from organic wastes such as livestock manure, food processing waste, etc.
- Landfill Gas: Landfill gas power plants collect the gasses emitted by landfills and turn them into productive uses.
- Municipal Solid Waste: Municipal solid waste "can be directly combusted in mass burn facilities as a fuel with minimal processing. It can undergo moderate to extensive processing before being directly combusted as refuse-derived fuel."[16]
- Pyrolysis: Pyrolysis involves the oxygen free decomposition of landfill destined waste using heat or thermal gasification.
- Waste Tire: Waste tire-to-energy facilities produce gypsum for agricultural use to make wallboard, fly ash (33% zinc) for animal feed and use as pigment, and bottom ash (70% iron oxide) to make cement, foundry, and road base.[17]

Distributed Generation

A closely related approach to energy reliability is distributed generation (DG), also referred to as distributed energy resources (DER), or self-generation. The California Energy Commission defines distributed generation to mean "…*electric generation connected to the distribution level of the transmission and distribution grid usually located at or near the intended place of use*."[18] Distributed G can cost-effectively displace or delay the need for new electricity infrastructure.

One aspect of distributed generation is "Self Generation. Self generation refers to systems owned by the customer and installed on their side of the meter to supply power on site. One example of self generation is the placement of solar panels on a structure to reduce energy costs.

Distributed generation contributes to energy reliability and energy security. Power users who can generate their own power are less dependent on the central grid, and can reduce peak load at times of high demand. Distributed generation users thus are less vulnerable individually to system-wide outages. Furthermore, distributed energy resources reduce the importance of large, central power generating stations that can be a single point of failure.

Depending on the type of technology, distributed energy resources may provide local and regional environmental benefits. This is particularly true of photovoltaic (solar) installations, wind turbines, and fuel cells. Biomass-to-energy facilities also can result in the reduction of environmental impacts relative to other means of organic waste transportation and disposal. Even though microturbines are often fossil-fuel-fired, the

[16] California Energy Commission. (24 June 2002). Municipal Solid Waste Power Plants. Accessed November 16, 2004, from http://www.energy.ca.gov/development/biomass/msw.html.
[17] California Energy Commission. (24 June 2002). Waste Tire to Energy. Accessed November 16, 2004, from http://www.energy.ca.gov/development/biomass/waste_tire.html.
[18] California Energy Commission, Distributed Generation Strategic Plan, June 2002

latest systems are very low emitting. Several have been placed around the SCAG region in biomass applications (using landfill gas) in projects funded by the SCAQMD.

Distributed generation installations also can provide opportunities to improve resource efficiency through waste heat recovery in the process, described earlier in this chapter, of cogeneration or combined heat and power (CHP). While cogeneration need not necessarily be applied in conjunction with distributed generation, it is integral to the design of systems referred to as micro- or mini-grids or power parks: a local cluster of power generators and users (residential, industrial, or otherwise) with a single connection to the main power grid.

A small portion of the SCAG region's electrical power is currently provided by distributed energy resources. According to the CEC's Distributed Generation Strategic Plan, there are over 500 installations totaling 766 MW of operational distributed generation in Southern California Edison's territory, with another 215 MW proposed.[19] The LADWP 2000 Integrated Resource Plan has a goal of meeting 50% of load growth through distributed generation, demand side management and renewable resources. [20]

The limited use of distributed generation in the SCAG region reflects a number of barriers that have slowed adoption. According to the National Renewable Energy Laboratory, barriers include the following:

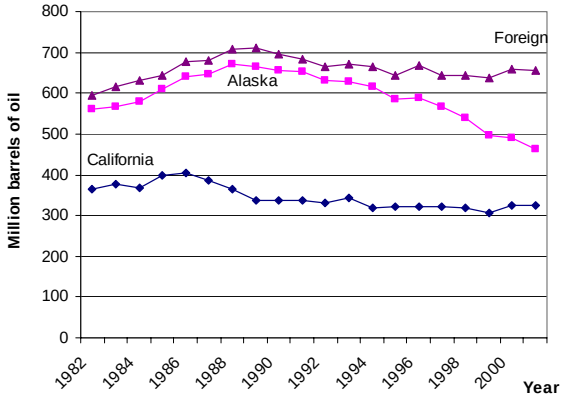
- Relatively small projects may face high fees, long approval processes, or burdensome insurance requirements. An example is high backup or standby charges, which a utility collects to cover the cost of providing power when the DG system is not operating. Another is an exit fee, which is levied on customers leaving the grid to compensate the utilities for the stranded cost of generating facilities.
- There is no national consensus on standard interconnection practices, so each project must go through a unique process, pay different charges, and meet different technical and safety standards. This may partly reflect utilities' lack of experience with DG projects, but could also stem from an understandable reluctance to lose part of their customer base.
- Local codes, standards, and environmental regulations that are not structured to recognize the attributes of distributed power[21]

Since many distributed generation technologies, such as wind and solar, take advantage of essentially free energy sources, the main installation barrier is the capital cost of equipment. A number of state programs have been established to facilitate the installation of distributed and self generation, including Governor Schwarzenegger proposal for a "million solar roofs" program designed to provide 3,000 megawatts of energy by 2018.[22]

[19] California Energy Commission, Distributed Generation Strategic Plan, June 2002
[20] Los Angeles Department of Water and Power, 2000 Integrated Resource Plan
[21] Source: U.S. Dept. of Energy, Energy Efficiency and Renewable Energy. http://www.eere.energy.gov/de/overcoming_obstacles.html accessed June 14, 2005
[22] California Senate Bill SB1 (2005 Session) as amended, accessed June 14, 2005.

Petroleum

California as a state ranks 4th in oil reserves and oil production. California also ranks 1st in gasoline consumption and 2nd in distillate fuel and jet fuel consumption.[23] California relies on oil produced within the state, Alaska, and foreign nations to supply its refineries and produce the petroleum that is used in automobiles and for other purposes. The percentage of oil that is imported from foreign nations has increased dramatically in the past twenty years. California produces 655 million barrels of oil each year in its 21 refineries. The sources of this oil are primarily domestic, with 49 percent being from California, 21 percent from Alaska and 29 percent from foreign sources.[24]



Oil supply sources to California refineries. *(Source: California Energy Commission. 2002b)*

Travel Fuel Consumption

The California Department of Transportation reports that vehicles in the SCAG region consumed over 21.5 million gallons of fuel per day in 2000, accounting for 47% of the fuel consumed in the state. The 414.5 million vehicle miles traveled daily in 2000 represented 47% of all vehicle miles traveled in the state.

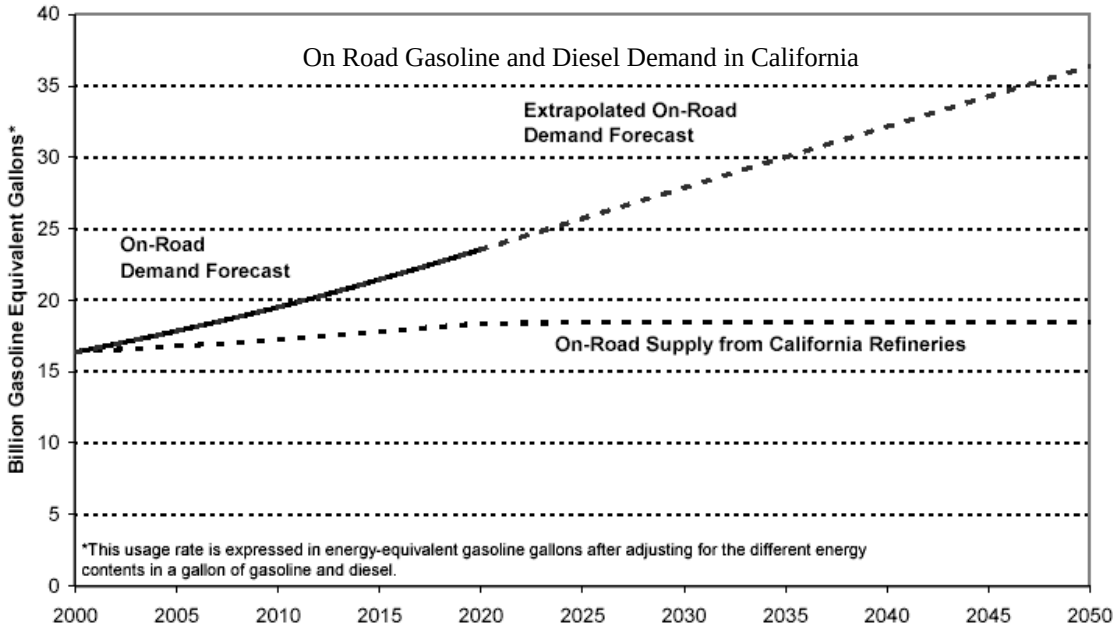
Vehicle Fuel Consumption (VFC) and Vehicle Miles Traveled (VMT), 2000

County/Region	VFC (Gallons/Day)	VMT/Day
Imperial	274,466	4,692,770
Los Angeles	11,579,222	224,343,633
Orange	3,735,060	73,383,463
Riverside	2,241,512	42,984,468
San Bernardino	2,773,932	50,377,970
Ventura	933,197	18,687,142
SCAG Region	21,537,389	414,469,447
California	46,121,370	880,468,493

Source: California Department of Transportation, Division of Transportation System Information. (November 2003). *California Motor Vehicle Stock, Travel and Fuel Forecast.*

[23] United States Department of Energy, Petroleum Profile, California; March 2005. http://tonto.eia.doe.gov/oog/info/state/ca.html
[24] California Dept. of Transportation: Fueling the Future, Transportation Energy in California (2003)

However, California's refining capacity has not been able to keep up with the demand for transportation fuels.[25] Because of that, the gasoline market is increasingly unstable as refinery accidents or scheduled maintenance create shortages and price fluctuations. The below figure indicates the demand forecast to 2050:[26]



The California Energy Commission and the California Air Resources Board are directed by law (2000 AB 2075) to develop and adopt recommendations for reducing dependence on petroleum. A performance based goal is to reduce petroleum demand to 15% below 2003 demand. The options include:[27]

- Near-Term Options (could be fully implemented by 2010)
  - Use more fuel efficient replacement tires with proper inflation
  - Improve fuel economy in government fleets
  - Improve private vehicle maintenance
- Mid-Term Options (could be fully implemented in the 2010-2020 time frame)
  - Double fuel efficiency of current model light duty vehicles to 40 miles/gallon
  - Use natural gas-derived Fischer-Tropsch fuel as a 33% blending agent in diesel
- Long-Term Options
  - Introduce fuel cell light duty vehicles in 2012, increasing to 10% of new vehicle sales by 2020, and 20% by 2030.

[25] California Energy Commission/California Air Resources Board: Reducing California's Petroleum Dependence, August 2003, P600-03-005F
[26] California Energy Commission (CEC)/California Air Resources Board: Reducing California's Petroleum Dependence, August 2003, P600-03-005F
[27] CEC/California Air Resources Board: Reducing California's Petroleum Dependence, August 2003, P600-03-005F

Recommendations include:[28]

1. The Governor and Legislature should adopt the recommended statewide goal of reducing demand for on-road gasoline and diesel to 15% below the 2003 demand level by 2020 and maintaining that level for the foreseeable future.
2. The Governor and Legislature should work with the California delegation and other states to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks and SUVs.
3. The Governor and Legislature should establish a goal to increase the use of non-petroleum fuels to 20% of on-road fuel consumption by 202 and 30% by 2030.

Building Energy Efficiency

Interest in "green buildings" has been growing for some time, as the impacts of buildings on the environment have come into clearer focus and a broader concern has developed regarding environmental sustainability. "Green building" standards go well beyond energy efficiency, involving usage of renewable resources and reduced waste generation and water usage, among other things. Such standards can reduce local environmental impacts, regional air pollutant emissions, and even global greenhouse gas emissions. A 2003 study conducted for the California Sustainable Building Task Force found that the 20-year value of energy savings in green buildings was more than three times the value of emissions, water, and waste savings combined.[29]

The following sections summarize several important building energy efficiency standards and programs. The study mentioned in the previous paragraph contains a more comprehensive discussion of building energy efficiency programs at the international, national, and state levels.

<u>Leadership in Energy and Environmental Design (LEED)</u>
During the 1990's, the non-profit U.S. Green Building Council developed the LEED Green Building Rating System for commercial buildings. The system awards points for various design features of a building, resulting in a rating ranging from Certified at the low end, through Silver and Gold to Platinum at the high end. The points are awarded for six categories, such as Energy and Atmosphere, Water Efficiency, and Indoor Environmental Quality. The Energy criteria include the following prerequisites:

- A requirement for building commissioning (a process to verify that fundamental building systems are installed and operating as intended); and
- A minimum level of energy efficiency for the building and its systems, based on the more stringent of the local energy code or ASHRAE[30] Standard 90.1-1999. (In California, the state building energy efficiency standards are more stringent.)

[28] CEC/California Air Resources Board: Reducing California's Petroleum Dependence, August 2003, P600-03-005F
[29] G. Kats, et al., *The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force* (October 2003) p. ix, Table ES-1 <http://www.usgbc.org/Docs/News477.pdf>. Accessed April 2004.
[30] American Society of Heating, Refrigerating, and Air-Conditioning Engineers, <http://www.ashrae.org/>.

Project applicants can go on to rate additional LEED points by taking the following steps:

- Reducing design energy cost beyond the minimum;
- Supplying a portion of building energy from on-site renewable sources;
- Conducting additional commissioning;
- Measuring and verifying continuing system performance through installation of specific meters; and
- Supplying half of the building's energy from renewable sources via contract.[31]

The LEED rating system has become one of the most popular and influential in the country, in part due to the participatory and professional nature of the Green Building Council.[32] In April 2004, the program marked its fourth year and 100th certified building.[33] According to the LEED web site, there are 14 LEED certified buildings in California.[34]

The table below lists several LEED certified and registered projects in the SCAG region. Registered projects are those intending to seek LEED certification.

LEED Projects in the SCAG Region

Organization	Building	City	Year	Status
Southern California Gas Company	Energy Resource Center	Downey	1995	Version 1 Certified
Ford Motor Company	Premier Automotive Group North American Headquarters	Irvine	2001	Version 2 Certified
Pomona College	Biology Building	Claremont	2002	Registered
Audubon Society	Audubon Center at Debs Park	East Los Angeles	2003	Version 2 Platinum
City of Los Angeles	Lake View Terrace Library	Los Angeles	2003	Registered
City of Santa Monica	Santa Monica Main Library	Santa Monica	2003	Registered
Inland Empire Utilities Agency	Inland Empire Utilities Agency Headquarters	Chino	2003	Version 2 Platinum
Natural Resources Defense Council	Santa Monica Office	Santa Monica	2003	Registered (on target for Platinum)
Riverside Public Utilities	Casa Blanca Energy Demonstration & Customer Service Center	Riverside	2003	Registered (on target for Silver)
Toyota Motor Sales	South Campus Office Development	Torrance	2003	Version 2 Gold
Loisos + Ubbelohde	Art Center College of Design South Campus	Pasadena	2003	Registered
City of Los Angeles	Boyle Heights Youth Technology & Recreation Center	Los Angeles	2003	Registered

[31] All energy prerequisites and credits (additional steps) from *LEED Green Building Rating System For New Construction & Major Renovations*, version 2.1 (LEED-NC, November 2002,) 21-32

[32] G. Kats et al. Op cit., p. 5.

[33] U.S. Green Building Council press release 2004 April 14. USGBC Announces 100th LEED® Certified Project. <http://www.usgbc.org/News/pressreleases_details.asp?ID=739>. Accessed April 2004.

[34] See https://www.usgbc.org/LEED/Project/project_list.asp, accessed July 2005.

March Air Reserve Base	C-17 Alter Squadron Operations Facility and Life Support Facility	Riverside	2003	Registered
Newmatic Engineering, Inc.	Newmatic Engineering Inc.	Irvine	2004	Registered
Orange County Integrated Waste Management Department	Bowerman Landfill Operations Building Addition	Irvine	2004	Registered
RAND	RAND Corporate Headquarters	Santa Monica	2004	Registered (on target for Silver)
State of California Department of Transportation	Caltrans District 7 Building Headquarters	Los Angeles	2004	Registered
Santa Monica	Public Safety Building	Santa Monica	2004	Version 2 Silver
The Gas Company	Murrieta Operating Base	Murrieta	2004	Version 2 Certified
Warner Bros. Entertainment Inc.	Warner Bros. Entertainment Inc., Bldg. 151	Burbank	2004	Version 1 Silver
South Park RPO, LLC	11th and Grand	Los Angeles	2004	Registered
Tricom	Yorkshire Development	Pasadena	2004	Version 2 Silver
British Petroleum	British Petroleum Carson Business Unit	Carson	2004	Registered
City of Burbank	Burbank Development and Community Services Building	Burbank	2004	Registered
City of Calabasas	City Hall	Calabasas	2004	Registered
City of Glendale	Glendale Water and Power Administration Building	Glendale	2004	Registered
Fullerton Arboretum Center	Fullerton Arboretum Interpretive Center	Fullerton	2005	Registered
Sempra Energy	Yukon Base Facility	Hawthorne	2005	Version 2 Silver
Community Corporation of Santa Monica	Colorado Court	Santa Monica	2005	Version 2 Gold
J. Paul Getty Trust	The Getty Center	Los Angeles	2005	Version 2 Certified
LPA, Inc.	LPA Irvine Headquarters	Irvine	2005	Version 1 Certified
MMA Properties	45 Eureka Street	Pasadena	2005	Registered
Aquarium of the Pacific	Aquarium of the Pacific - Classroom & Watersheds Exhibit	Long Beach	2005	Registered
U.S. Navy	Navy's Energy % Sustainable Demonstration Facility	Port Hueneme	2005	Version 2 Gold

As of April 2004, the LEED list of registered projects included 204 building projects statewide.[35] Nationally, three percent of all new construction projects have registered intent to seek LEED certification.[36]

It is possible to reach LEED levels without doing more than just minimally complying with the Building Energy Efficiency Standards. However, projects can earn two additional LEED points by reducing energy usage 20% more than required by the Building Energy Efficiency Standards.

Energy Star Homes

Energy Star is a "a government-backed program helping businesses and individuals protect the environment through superior energy efficiency."[37] The Energy Star Homes program results in energy-efficient residential construction through such measures as high-performance windows, tested and field-verified duct sealing, and properly sized and installed air conditioning, as well as higher-efficiency heating, air conditioning and water heating equipment.

California homes built to qualify for the Energy Star Homes program are 15% more efficient than the state Building Energy Efficiency Standards. Energy Star also operates programs that promote energy-efficient appliances. California's investor-owned utilities offer financial assistance and marketing assistance to builders who build to California Energy Star Homes Program requirements, and also provide rebates on many types of Energy Star appliances.

California Building Energy Efficiency Standards

As mentioned above, California established statewide building energy efficiency standards following legislative action. The legislation required the standards to:

- be cost-effective,
- be based on the building life cycle, and to
- include both prescriptive and performance-based approaches.[38]

It is estimated that the standards will have saved Californians $79 billion by 2013 (total of electricity and natural gas savings, including savings from appliance standards).[39]

The standards have been periodically updated as technology and design have evolved. Generally, the standards are updated every three years. As a result of AB 970, passed in the fall of 2000 in response to the state's electricity crisis, an emergency update of the Standards went into effect in June 2001. The Commission then initiated an immediate follow-on proceeding to consider and adopt updated Standards that could not be

[35] See https://www.usgbc.org/LEED/Project/project_list_registered.asp, accessed April 2004.
[36] U.S. Green Building Council, et al. Making the Business Case for High Performance Green Buildings, https://www.usgbc.org/Docs/Member_Resource_Docs/makingthebusinesscase.pdf, accessed April 2004.
[37] See http://www.energystar.gov/.
[38] California Energy Commission. Initial Study/Proposed Negative Declaration for the 2005 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, Staff Report, September 2003, P400-03-018, p. 7.
[39] California Energy Commission. *2003 Integrated Energy Policy Report*,. P100-03-019. Sacramento, California: California Energy Commission, December 2003, p. 10. http://www.energy.ca.gov/reports/100-03-019F.PDF

completed during the emergency proceeding. The 2005 Building Energy Efficiency Standards were adopted in November 2003, to take effect in October 2005.[40]

Title 24 of the California Code of Regulations comprises the state Building Standards Code. Part 6 of Title 24 is the California Energy Code, which includes the building energy efficiency standards. The standards[41] include provisions applicable to all buildings, residential and non-residential, which describe requirements for documentation and certificates that the building meets the standards. These provisions include mandatory requirements for efficiency and design of the following types of systems, equipment, and appliances:

- Air conditioning systems
- Heat pumps
- Water chillers
- Gas- and oil-fired boilers
- Cooling equipment
- Water heaters and equipment
- Pool and spa heaters and equipment
- Gas-fired equipment including furnaces and stoves/ovens
- Windows and exterior doors
- Joints and other building structure openings ("envelope")
- Insulation and cool roofs
- Lighting control devices.

The standards include additional mandatory requirements for space conditioning (cooling and heating), water heating, and indoor and outdoor lighting systems and equipment in non-residential, high-rise residential, and hotel or motel buildings.

Mandatory requirements for low-rise residential buildings cover indoor and outdoor lighting, fireplaces, space cooling and heating equipment (including ducts and fans), and insulation of the structure, foundation, and water piping.

In addition to the mandatory requirements, the Standards call for further energy efficiency that can be provided through a choice between performance and prescriptive compliance approaches. (Separate sections apply to low-rise residential and to non-residential, high-rise residential, and hotel or motel buildings.) In buildings designed for mixed use (e.g., commercial and residential), each section must meet the standards applicable to that type of occupancy.[42]

The performance approach provides for the calculation of an energy budget for each building and allows flexibility in building systems and features to meet the budget. The energy budget addresses space-conditioning (cooling and heating), lighting, and water heating. Compliance with the budget is determined by the use of a CEC-approved computer software energy model. The alternative prescriptive standards require demonstrating compliance with specific minimum efficiency for components of the building such as building envelope insulation R-values, fenestration (areas, U-factor and solar heat gain coefficients of windows and doors) and heating and cooling, water heating

[40] California Energy Commission, 2005 Energy Efficiency Building Standards Update, http://www.energy.ca.gov/2005_standards/background.html, accessed April 2004.
[41] California Energy Commission, 2005 Building Energy Efficiency Standards, Commission Proposed Standards, P400-03-001ET15, October 2003.
[42] California Energy Commission, 2005 Building Energy Efficiency Standards, Commission Proposed Standards, P400-03-001ET15, October 2003, Section 100(f).

and lighting system design requirements. These requirements vary depending on the building's location in the state's 16 climate zones.

The 2005 standards, which are expected to become effective statewide in October 2005, include the following major changes:

- Updated energy budgets that recognize the time dependence of energy usage by season and time of day.
- Incorporation of new federal appliance standards and other advances in technology emerging from the state's Public Interest Energy Research program.
- Incorporation of new state standards for outdoor lighting and for indoor and outdoor signs.
- Changes to improve the quality of construction and verification of reliable energy savings.

Community Energy Efficiency Program

In 1999, the Building Industry Institute (BII), the training and education arm of the California Building Industry Association, worked with an industry and government advisory group to develop the Community Energy Efficiency Program for local governments. The concept is for local governments to offer a range of incentives to motivate builders to improve the energy efficiency of new home construction in their community by 15% compared to Title 24.

Forty-five SCAG member cities and an additional seven non-member cities are currently participants in this program. There are over seventy participants statewide. Incentives offered by participating jurisdictions include expedited review of building plans, permit fee reduction, and public recognition of the builder for their efforts.[43] The hallmark of the program is third-party field verification of the quality of installation of the energy efficiency measures. By providing third-party field verification, the program is particularly helpful to local governments, who can be assured that the energy efficiency measures are installed properly without intensive site inspections by local building department staffs.

Collaborative for High Performance Schools

New school facilities are much in need throughout the state. This California non-profit group, known as CHPS, provides best practices and criteria for the construction of schools so as to create "environments that are not only energy efficient, but also healthy, comfortable, well lit and contain the amenities needed for a quality education."[44] CHPS schools provide more natural daylight and a healthier environment for students, teachers, and staff, and are beginning to reduce school district expenditures on energy, which according to CHPS exceed the combined costs of supplies and books.[45]

[43] See http://www.thebii.org/lgp.asp.
[44] http://www.chps.net/overview/index.htm
[45] http://www.chps.net/overview/index.htm

California Governor's Sustainable Building Goal

On August 2, 2000, California Governor Gray Davis signed Executive Order D-16-00, "to site, design, deconstruct, construct, renovate, operate, and maintain state buildings that are models of energy, water, and materials efficiency; while providing healthy, productive and comfortable indoor environments and long-term benefits to Californians."[46] New state buildings, such as the Department of General Services' East End Complex Block 225 in Sacramento, have been built to sustainable standards as a result. The California Integrated Waste Management Board maintains a website that provides further information and resources for green building design and construction.[47]

Costs and Benefits of Building Energy Efficiency Standards

Cost is a main consideration when undertaking improvements to building energy efficiency. It may cost more to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. (Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means).

Probably the most comprehensive and persuasive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report:

> *While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building.*[48]

The Initial Study/Proposed Negative Declaration for the 2005 Building Energy Efficiency Standards prepared by the California Energy Commission found overall energy and environmental benefits from the standards update.[49] Annual cumulative statewide energy savings from implementation of the standards were estimated at over 600 GWh of electricity and 10 million therms of natural gas, along with a 181-MW drop in peak demand. Statewide total emissions reductions from application of the 2005 standards were estimated at 42 tons/year of NO_x, 3 tons/year of PM_{10}, and 8 tons/year of CO.[50]

---

[46] Executive Order D-16-00 by the Governor of the State of California. August 2, 2000.
[47] See http://www.ciwmb.ca.gov/greenbuilding/Basics.htm.
[48] http://www.ciwmb.ca.gov/greenbuilding/Design/CostBenefit/Report.pdf
[49] California Energy Commission—Staff Report, *Initial Study/Proposed Negative Declaration for the 2005 Building Energy Efficiency Standards for Residential and Non-residential Buildings,* (September 2003) P400-03-018, Section VII, Cumulative Effects.
[50] The report points out that some space cooling is natural-gas-fired, which may cause localized emissions in some air basins. However, the CEC estimates that the contribution from gas cooling would be no more than 0.001% over current emission levels, and would be "dwarfed" by the overall emission reductions from the standards. Individual air districts can also restrict the use of gas-fired cooling without conflicting with the state standards.

Potential Savings in the SCAG Region

The SCAG region will receive a share of the foregoing benefits from application of the state 2005 energy efficiency standards. For example, the SCAG region consumes about 45% of statewide total electricity,[51] and can be expected to enjoy a similar share of energy savings benefits and emissions benefits (with some differences depending on the location of power generation).

The region will receive further energy and emissions savings and benefits from local adoption of standards beyond Title 24. If this step were taken region wide, CEC estimates show that the SCAG region could experience a further reduction in electricity demand amounting to about 199 GWh/year and for natural gas amounting to about 2.9 million therms per year, as well as a 50-MW reduction in peak power demand. While these savings are small in percentage terms, the related emissions savings could be significant. According to CEC estimates, with local adoption of ordinances going beyond Title 24, the region could experience a further decrease of 51 tons/year of NO_x, 7 tons/year of PM_{10}, and 25 tons/year of CO.[52] Emissions of the greenhouse gas CO_2 would also be reduced.

Compared to other types of emission reduction measures, energy efficiency measures can be a low-cost option – even no cost, as in the case of behavior changes. Energy efficiency measures can be most cost-effective in combination with integrated building design efforts that allow synergies between systems and the structure itself.

Locally Adopted Energy Standards

The State Building Energy Efficiency Standards provide that local jurisdictions may adopt building energy standards as long as the resulting buildings will not use more energy than under the state standards. To ensure this, a city or county in the SCAG region may choose to adopt an ordinance requiring new or modified construction to go beyond the state standards by a certain percentage. Any city or county could modify the target percentages based on local needs and climate conditions.

A jurisdiction adopting local standards must submit four copies of the following documentation to the CEC:[53]

- The proposed local energy standards (requiring early adoption).
- A study and supporting analysis showing how energy savings were determined.
- A statement that the local standards will require buildings to be designed to consume no more energy than permitted by Title 24, Part 6.
- The basis of the determination that the standards are cost-effective.

[51] Southern California Association of Governments. *Regional Comprehensive Plan and Guide, Energy Chapter Update 2002*, p. 11.
[52] R. Hudler, California Energy Commission, personal communication, May 2004. Unlike the statewide estimates for adoption of the 2005 standards, these estimates include emissions from natural gas combustion in power plants in addition to emissions from on-site usage.
[53] California Energy Commission, 2005 Building Energy Efficiency Standards, Commission Proposed Standards, P400-03-001ET15, October 2003. Section 10-106(b), based on Section 25402.1, Public Resources Code.

The CEC must approve the local ordinance before it is adopted. Following submission of these materials, a jurisdiction should expect about two months for CEC approval. Once this is received, local adoption may proceed.

Demand Response Programs

Utilities such as Southern California Edison offer a variety of Demand Response Programs to help qualifying commercial and residential customers reduce their energy usage during peak times. These programs include:[54]

- Summer Discount Plan
- California Demand Reserves Partnership (Cal-DRP)
- Demand Bidding Program
- I-6 Large Power Interruptible Program
- Scheduled Load Reduction Program
- The GoodWatts Program
- Base Interruptible Program (TOU-BIP)
- Critical Peak Pricing
- SCE Energy$mart ThermostatSM Program
- Agricultural and Pumping Interruptible Service Program
- Optional Binding Mandatory Curtailment Program

The goal of the programs is to reduce the demand on the electricity distribution system during peak periods.

Community Choice Aggregation

Community Choice Aggregation (CCA), as defined by AB 117, permits any city, county or city and county to aggregate the electric loads of residents, businesses and municipal facilities to facilitate the purchase and sale of electrical energy.[55] CCA involves communities joining together to purchase energy in bulk, thus receiving a better price on their energy purchase than if they were to purchase the energy individually.

Future Energy Demand

Strong population and economic growth continue to be forecasted for the SCAG region, meaning that energy demand will likely continue to increase as well. SCAG forecasts that the region will add over 6 million people, 2 million households, and 3 million jobs between 2000 and 2030. These people, households, and jobs will place new demands on energy generation and distribution.

Despite the inevitable demands of growth on the region's energy supplies, little energy forecasting is formally conducted. Processes that formerly occurred at the state level, particularly for electricity demand forecasting, are no longer conducted in a restructured California market. Municipal utilities conduct their own planning processes, but do not coordinate their forecasts with each other or with those of the private utilities. There is no longer a coordinated process for planning maintenance on power generation facilities, creating a higher risk of outages even when demand is typically low.

[54] http://www.sce.com/RebatesandSavings/LargeBusiness/DemandResponse/Default.htm
[55] Local Government Commission. (n.d.) Community Choice Aggregation. Accessed November 19, 2004, from http://www.lgc.org/cca/what_is_cca.html.

At one time, state agencies conducted integrated resource planning (IRP), a process that "integrat[es] a broader range of technological options, including technologies for energy efficiency and load control on the 'demand-side', as well as decentralized and non-utility generating sources, into the mix of potential resources. Also, it means integrating a broader range of cost components, including environmental and other social costs, into the evaluation and selection of potential technical resource (cite)."

Energy infrastructure planning takes time and therefore should be the subject of well-structured long-range planning efforts. As the energy grid evolves, former divisions between transportation energy, natural gas, and electricity may begin to fade away. Some new vehicles run on electricity; some on natural gas. New hybrids run on electricity and gasoline together. Fuel cell technology is progressing and will eventually become more common. As these technologies converge, the region needs to plan for the needed transportation and energy infrastructure while using its limited land resources efficiently and continuing to improve air and water quality. Land-Use decisions continue to determine the regional energy demands necessary to heat and cool residences and to travel to and from work.

Through its Energy Resource Investment Plan, (a "living document" updated as market conditions and consultations require it) the California Power Authority is taking steps to resurrect the IRP process. In it's 2003-2004 update, the plan lays out an investment strategy that

- Readiness to "step-in" to finance and/or own new power plants that must be built or completed to ensure power reliability or power supply in California, when private companies do not build or cannot finance, and the need for such action is the consensus view of the responsible State agencies.
- Advancing our Demand Reserves Partnership program through revised institutional and contractual arrangements.
- Increasing the contribution of renewable energy resources to the power portfolio through financing and aggregation services to load-serving entities (LSEs) Statewide (investor-owned utilities [IOUs], publicly-owned utilities, and energy service providers).
- Facilitating investments in efficiency and distributed generation on public facilities across the State. .[56]

<u>Electricity</u>

Given the recent history of California's electricity market, concern has focused on whether short-term imbalances of power supply and demand will continue. Whatever the causes of the shortages and blackouts face in the state since 2000, most experts seem to agree that statewide energy reserves continue to be too slim.

The California Energy Commission has estimated electricity consumption for the SCAG region to 2013. Commercial businesses will continue to be the sector using the greatest amount of electricity in the forecast years of 2010 and 2013. All other sectors will increase their consumption of electricity with the exception of the mining sector, which

[56] http://www.documents.dgs.ca.gov/CPA/ERIP/ERIP_2003_FINAL_DOCUMENT_062703.pdf

will see a decrease in electricity. The years 2010 and 2013 include estimates of electric vehicles using electricity. The projections for energy consumption by electric vehicles amount to a fraction of a percent of total energy consumption, but they do suggest new technologies of the future.

Forecast Electricity Demand by Sector (In Millions of Therms)

Year	Region	Sector							Total Consumption
		Resid'l	Comm'l	Industry	Mining	Agricult	Other	Electric Vehicles	
2010	SCAG	39,812	50,486	24,921	2,805	6,741	7,181	240	132,186
2010	California	90,040	104,191	49,888	5,957	22,432	16,124	300	288,932
2013	SCAG	41,800	51,924	25,534	2,785	7,124	7,437	480	137,084
2013	California	94,534	107,601	51,117	5,900	22,873	16,960	600	299,585

Source: California Energy Commission. (August 2003). *California Energy Demand 2003-2013 Forecast.*

Natural Gas

The California Energy Commission's estimates of natural gas consumption do not show a drastic increase in consumption from 2001 to 2010 or 2013. The industrial sector and the transportation, communications, and utilities sector are forecast to experience a decrease in the amount of natural gas consumed. The other four sectors are forecast to experience modest increases in natural gas consumption.

Forecast Natural Gas Demand by Sector (In Millions of Therms)								
Year	Region	Sector						Total Consumption
		Resid'l	Comm'l	Industry	Mining	Agricult	Transportation, Communication, and Utilities	
2010	SCAG	2,809	1,047	1,601	2,776	88	62	8,382
2010	California	5,565	2,069	3,551	3,099	203	163	14,651
2013	SCAG	2,889	1,075	1,586	2,836	88	62	8,535
2013	California	5,718	2,113	2,487	3,166	203	164	14,852
Source: Southern California Gas Company. *Southern California Gas Report 2004.*								

Hydrogen

California is developing the infrastructure for a "hydrogen highway," a three phase strategy, with the first phase to be completed by 2010, and future phases as needs dictate.[57] Governor Schwarzenegger christened Station #1 of the California Hydrogen Highway on April 20, 2004. There are thirteen existing hydrogen fueling stations in the state, with seventeen more planned. By 2010, the plan is to have 170 fueling stations, or a station every 20 miles along major federal and state highways across the state. Hydrogen-powered fuel cells are an important part of the energy solution to reduce California's reliance on fossil fuels.

Travel Fuel Consumption

The California Department of Transportation forecasts that the daily gallons of vehicle fuel consumed and the daily vehicle miles traveled will increase across the state by 2025. The SCAG region's percentage of the total vehicle fuel consumed and vehicle miles traveled will remain consistent with the year 2000, with 47% of the state's fuel consumed and miles traveled taking place in the SCAG region. The number of gallons a day that will be consumed by vehicles will increase 61% over 2000 levels and the vehicle miles traveled will increase 58% over 2000 levels.

Vehicle Fuel Consumption (VFC) and Vehicle Miles Traveled (VMT), 2025		
County/Region	VFC (Gallons/Day)	VMT/Day
Imperial	643,318	11,460,679
Los Angeles	16,687,370	318,343,858
Orange	5,452,405	105,686,474
Riverside	5,025,981	91,580,351
San Bernardino	5,451,668	98,266,022
Ventura	1,502,315	29,465,389
SCAG Region	34,763,058	654,802,773
California	74,719,778	1,406,169,605
Source: California Department of Transportation, Division of Transportation System Information. (November 2003). *California Motor Vehicle Stock, Travel and Fuel Forecast.*		

[57] http://www.hydrogenhighway.ca.gov/media/blueprintfacts.pdf

Preliminary Measurements/Indicators

- Per capita electricity consumption
  Is the per capita electricity consumption increasing or decreasing? The region's goal should be to reduce per capita consumption.
- Per capita travel fuel consumption
  Is the per capita travel fuel consumption increasing or decreasing. The region's goal should be to reduce travel fuel consumption.
- Energy imports
  - Electricity
    Is the region importing more or less energy from out of state and out of the country?
  - Travel fuel
    Is the region importing more or less travel fuel from out of state and out of the country?
- Percentage share of renewable energy in energy mix
  Is the percentage share of renewable energy increasing?
- LEED-certified buildings
  Are the number of LEED-certified buildings increasing?
- Automobile fuel efficiency
  Are automobiles becoming more fuel efficient?
- Percentage share of alternative fuel vehicles/hybrid vehicles
  Is the percentage share of alternative fuel/hybrid vehicles increasing?

References

California Department of Conservation, Division of Oil and Gas. Annual Report of the State Oil and Gas Supervisor. Accessed August 16, 2004, from http://www.energy.ca.gov/naturalgas/statistics/gas_supply_by_source.html

California Department of Transportation, Division of Transportation System Information. (November 2003). *California Motor Vehicle Stock, Travel and Fuel Forecast*.

California Energy Commission. (9 September 2004). Energy Commission Geothermal Program. Accessed November 19, 2004, from http://www.energy.ca.gov/geothermal/.

California Energy Commission. (7 July 2004). Oil Supply Sources to California Refineries. Accessed August 16, 2004, from http://www.energy.ca.gov/oil/statistics/crude_oil_receipts.html

California Energy Commission. (5 May 2004). 2003 Net System Power Calculation Report, Energy Commission Publication # 300-04-001R. Accessed August 16, 2004, from http://www.energy.ca.gov/electricity/gross_system_power.html

California Energy Commission. (n.d.). *California 2001 Electric Utility Retail Deliveries*. Retrieved August 3, 2004, from http://www.energy.ca.gov/electricity/utility_electric_sales_2001.xls

California Energy Commission. (October 2003). 2005 Building Energy Efficiency Standards, Commission Proposed Standards, P400-03-001ET15.

California Energy Commission. (September 2003). Initial Study/Proposed Negative Declaration for the 2005 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, Staff Report, P400-03-018.

California Energy Commission. (August 2003). *California Energy Demand 2003-2013 Forecast*.

California Energy Commission. (24 June 2002). Municipal Solid Waste Power Plants. Accessed November 16, 2004, from http://www.energy.ca.gov/development/biomass/msw.html.

California Energy Commission. (24 June 2002). Waste Tire to Energy. Accessed November 16, 2004, from http://www.energy.ca.gov/development/biomass/waste_tire.html.

California Energy Commission. (22 May 2001). Hydroelectric Power in California. Accessed November 19, 2004, from http://www.energy.ca.gov/electricity/hydro.html.

California Energy Commission. (July 2000). Tier 1: A New Energy Standard for State Buildings, Consultant Report (Draft), P400-00-019.

California Energy Commission. *2003 Integrated Energy Policy Report*,. P100-03-019. Sacramento, California: California Energy Commission, December 2003, p. 10. http://www.energy.ca.gov/reports/100-03-019F.PDF

California Energy Commission, 2005 Energy Efficiency Building Standards Update, http://www.energy.ca.gov/2005_standards/background.html, accessed April 2004.

California Energy Commission, 2005 Building Energy Efficiency Standards, Commission Proposed Standards, P400-03-001ET15, October 2003.

California Energy Markets. (23 April 2004). No. 768, Working Energy Development for the Greater West.

California Gas Reports, FERC Form 2, QFER Form 6a and 10a.

California Integrated Waste Management Board. (4 Feb. 2004). Biomass to Energy. Accessed December 9, 2004, from http://www.ciwmb.ca.gov/Organics/Conversion/BioEnergy/.

California Integrated Waste Management Board. (June 2001). The Economics of Green Buildings, Task Three Report. Prepared by Natural Strategies LLC.

Executive Order D-16-00 by the Governor of the State of California. August 2, 2000.

Holdren, John P., et al. 1997. Energy Efficiency. Federal Energy Research and Development for the Challenges of the 21st Century. <http://bcsia.ksg.harvard.edu/ BCSIA_content/ documents/pcast97_ch3.pdf>.

Kats, G., et al. October 2003. The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force [p. ix, Table ES-1] <http://www.usgbc.org/Docs/News477.pdf>.

LEED Green Building Rating System for New Construction & Major Renovations, version 2.1 (LEED-NC, November 2002,) 21-32

Local Government Commission. (n.d.) Community Choice Aggregation. Accessed November 19, 2004, from http://www.lgc.org/cca/what_is_cca.html.

Pacific Region Application Center. (n.d.). Mission Statement. Accessed November 17, 2004, from http://www.chpcenterpr.org/Mission/Index.aspx.

Pacific Southwest Combined Heat and Power Initiative. (n.d.) The Pacific Southwest

CHP Initiative. Accessed November 17, 2004, from http://www.pswchpi.org/index2.aspx.

Southern California Association of Governments. 2002. Regional Comprehensive Plan and Guide, Energy Chapter Update 2002.

Southern California Association of Governments. March 2004. 2004 Regional Transportation Plan.

Southern California Association of Governments. April 2004. 2004 Regional Transportation Plan Program Environmental Impact Report. SCH #2003061075.

Southern California Edison Company. (30 July 2004). *QF Resources: Qualifying Facilities Semi-Annual Status Report to the California Public Utilities Commission.*

Southern California Gas Company. *Southern California Gas Report 2004.*

U.S. Department of Energy. (3 Nov. 2004). Biomass Today. Accessed November 16, 2004, from http://www.eere.energy.gov/biomass/biomass_today.html.

U.S. Department of Energy. (27 Oct. 2004). Biomass Program. Accessed November 16, 2004, from http://www.eere.energy.gov/biomass/.

U.S. Department of Energy. (6 January 2004). Geothermal Energy. Accessed November 17, 2004, from http://www.eia.doe.gov/cneaf/solar.renewables/page/geothermal/geothermal.html.

U.S. Environmental Protection Agency. (26 Oct. 2004). Combined Heat and Power Partnership. Accessed November 17, 2004, from http://www.epa.gov/chp/index.htm.

U.S. Green Building Council, et al. Making the Business Case for High Performance Green Buildings, <https://www.usgbc.org/Docs/Member_Resource_Docs/makingthebusinesscase.pdf>.

U.S. Green Building Council. November 2002. LEED Green Building Rating System for New Construction & Major Renovations (LEED-NC), Version 2.1.

U.S. Green Building Council press release. April 14, 2004. USGBC Announces 100th LEED® Certified Project. <http://www.usgbc.org/News/pressreleases_details.asp?ID=739>.

XENERGY, Inc., and Sera Architects. (18 June 2000). Green City Buildings: Applying the LEED™ Rating System. Prepared for Portland Energy Office, Portland, OR.

REPORT

DATE: July 7, 2005

TO: Regional Comprehensive Plan Task Force

FROM: Jacob Lieb, Acting Lead Regional Planner, (213) 236-1921, lieb@scag.ca.gov

SUBJECT: Solid and Hazardous Waste Chapter

RECOMMENDED ACTIONS:

Recommend that the Energy and Environment Committee release the Preliminary Draft Solid and Hazardous Waste Chapter for public review. Approve the process described below for making refinements to the chapter.

SUMMARY:

On December 15, 2004, the Regional Comprehensive Plan (RCP) Task Force gave instructions to staff on the completion of a Draft Solid Waste Chapter. A subsequent report to the Energy and Environment Committee was made in January 2005. Staff has prepared a preliminary draft for the Task Force's consideration at this time. Further, staff is proposing additional steps to make refinements to the Chapter consistent with previous Task Force discussions.

BACKGROUND:

The Regional Comprehensive Plan incorporates all applicable, current policies of the Regional Council, and develops an action plan for implementation by outside entities. Over the last year, staff, under the direction of the RCP Task Force, has developed a preliminary draft of the Solid and Hazardous Waste Chapter. This chapter has also been reviewed by the Solid Waste Task Force, a standing advisory group to the EEC which is composed of both policy makers and experts and stakeholders in the field.

At this time, the chapter should not be considered final. Rather, it includes the two key sections developed during the first year of the planning process. Pending approval by the Task Force and the EEC, staff will release this preliminary draft to the public, and undertake further activities to refine and complete the Chapter.

As discussed with the Task Force at the April and May 2005 meetings, the current (2005-2006) fiscal year effort will focus on the crafting of performance outcomes for each chapter. These outcomes should have the following features:

- Consistent with Federal and State legal requirements, at a minimum (can be more rigorous, but not less)
- Fully incorporates plans prepared by responsible agencies
- Can be measured at intermediate stages
- Can be adapted to be used as significance thresholds in environmental analysis under the California Environmental Quality Act.

For the Solid and Hazardous Waste Chapter, this process, as proposed by staff, will be guided by the Solid Waste Task Force. The procedure for developing plan outcomes will include a review of all applicable State and regional plans, direct outreach to agencies with policy and regulatory authority, and dialogue to mediate various plan provisions.

Attachment: Preliminary Draft Solid and Hazardous Waste Chapter

This Draft Solid Waste Chapter, as presented, is preliminary, and has not been subject to formal approval of the SCAG Regional Council or any Committee. The action plan is based on the discussions of the RCP Task Force and is being made available at this time for information and for suggestions.

INTRODUCTION

This chapter presents policies regarding solid waste and hazardous waste adopted by SCAG's Regional Council, an action plan to meet the policy requirements and a listing of existing conditions.

The solid waste action plan is organized according to the implementing authority. As such, there is a section for recommendations for the federal government, the California government, SCAG and other regional agencies, and local government. The action plan is further organized by distinguishing actions that are critical to implementing SCAG's regional growth vision and those which are presented as advisable practices. While the actions included here are advisory, SCAG will refer to its recommended practices in administering Inter-Governmental Review as authorized by CEQA. The action plan includes items identified as mitigation in the Program Environmental Impact Report for the 2004 Regional Transportation Plan (RTP).

In addition to the solid waste action plan, the chapter contains data on

- solid waste and hazardous waste generation and disposal,
- disposed solid waste composition,
- solid waste diversion rates and recycling,
- solid waste landfill capacity, and
- non-disposal solid waste facilities, such as
    - solid waste transfer stations,
    - material recovery facilities,
    - waste-to-energy disposal facilities, and
    - conversion technology disposal facilities.

This chapter also forecasts solid waste disposal needs as far as projections are available. Performance indicators, if used, can measure how the region is progressing toward its policy goals and relate the region's progress on solid waste issues to the Regional Council's Growth Vision principles.

SCAG POLICIES REGARDING SOLID WASTE, INCLUDING HAZARDOUS WASTE

SCAG has established policies regarding solid waste, including hazardous waste. These policies can be used as a guide for jurisdictions when establishing their own waste management policies.

The guiding policy for this chapter is to "*Promote Sustainability for Future Generations.*" The Regional Council, through its 2004 Growth Vision, recognizes that management of solid waste and hazardous waste must be sustainable in order to efficiently manage natural resources and in order to protect the environment today and in the future. The overarching solid waste policy is to:

- *Develop strategies to accommodate growth that use resources efficiently, eliminate pollution, and significantly reduce waste generation, and that return waste stream materials to beneficial use.*(Policy Reference: 72)

SCAG Solid Waste Policies

SCAG has various policies to meet the overarching solid waste policy. These are listed below along with changes recommended by the Solid Waste Task Force.

- ~~*Waste reduction goals and programs should be included in each of the county plans (Policy Reference: 135)*~~ [recommended delete since this is legally required of county and local governments]
- *Encourage local jurisdictions to continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, shall encourage ~~further recycling~~ all opportunities to exceed these rates.* (Policy Reference 187)
- ~~*Work with regulatory agencies to integrate requirements into local policies to the extent possible, and clarify the roles and responsibilities of regulatory agencies vis a vis local agencies, and thereby improve local government's ability to first understand its options, choose from them and then act accordingly* (Policy Reference: 107)~~
- *The California Integrated Waste Management Board should work with jurisdictions required to implement solid waste diversion mandates that are enacted by the legislature with an emphasis on programmatic, rather than mathematical compliance.* (Policy Reference: 186[modified])
- *Encourage the California Integrated Waste Management Board and the Legislature to pursue policy measures that will accelerate the commercialization and permitting of beneficial solid waste conversion technologies.* (Proposed new policy)
- *Minimize future impacts related to management of solid waste ~~through cooperation, information sharing, and program development during the update of the Integrated Solid Waste Management chapter of SCAG's Regional Comprehensive Plan and Guide and through SCAG's Energy and Environment Committee. SCAG shall consult with the California Integrated Waste Management Board during this process.~~* (Policy Reference: 188 [modified])

Hazardous Waste Policies

SCAG has adopted a resolution and several policies on hazardous waste. The Regional Council's goal in developing these policies is that hazardous waste is minimized and that jurisdictions accommodate the hazardous waste that is produced within their boundaries.

- ~~*Regional cooperation can help ensure that counties coordinate their approaches to hazardous waste management facility siting criteria to avoid one county's policies being significantly more restrictive than another county's, thereby leading to inequitable facility siting decisions. Through regional cooperation, general areas for hazardous waste management facility development that meet regional needs can be identified.* (Policy Reference: 134) Recommend deletion~~
- *Support only the use of the best available technology including monitoring, air, and water impacts for locating any nuclear waste facility.* (Policy Reference: 148)

- *Every county should accept responsibility for the management of hazardous wastes in the region in an amount proportional to the hazardous wastes generated within the county.* (Policy Reference: 133)
- *Jurisdictions should work together to develop a common siting criteria for hazardous waste facilities.* [proposed new policy]
- *Encourage federal, state and local efforts to educate businesses on the use of less dangerous alternatives than hazardous materials.* (Policy Reference: 170)
- *Encourage the U.S. Department of Transportation and the California Highway Patrol to continue to enforce existing regulations governing goods movement and hazardous waste transportation.* (Policy Reference 169)

Action Plan

In order to make these policies useful, there needs to be an action plan that will allow jurisdictions to implement the policies. Through the Regional Comprehensive Plan Task Force and SCAG policy committees, the Regional Council has devised an action plan that presents a menu of options for jurisdictions regarding solid waste and hazardous waste. All of these items in the action plan relate to one or more of the solid waste policies as well as the mitigation measures in the 2004 Regional Transportation Plan (RTP) Program Environmental Impact Report (PEIR). The mitigation measures are part of the Action Plan.

RECOMMENDED ACTIONS

Source Reduction and Waste Prevention

1. SCAG strongly encourages all levels of government to advocate for source reduction and waste prevention. Source reduction or waste prevention includes actions to reduce waste at the source. Products with less packaging, eliminating unwanted mail before it is sent, and reusing or recycling items instead of disposing of them are all ways to prevent waste. Actions related to source reduction or waste prevention include advocating for (Policy Reference 135):

- Reducing the use of excess material used in packaging products;
- increasing the useful life of products through durability and reparability;
- decreasing of the toxicity of products;
- facilitating material or product reuse;
- the reduction, or more efficient consumer use, of materials; and
- increasing production efficiency to produce less production waste;
- continued support of government source reduction programs;
- the continuing advocation of consumer-based "recycling" or "eco-shopping" strategies
- supporting state programs that offer incentives to those who use recycled content; thus encouraging growth in the recycled contents market;
- eliminating unnecessary duplication and/or restrictive regulations that hinder recycling, reuse, composting and conversion of solid waste;
- continuing to support efforts at all levels to stimulate the growth of recycling markets that controls the state mandates and/or demands percentage recycling;

- continuing to advocate for the development of incentives to increase the use of recycled contents materials;
- encouraging market demand for recycled content;
- advocating and supporting the education of businesses and industries for source reduction efforts and to the benefits of using post recycled content;
- advocating and supporting the simplification and timeliness of required reporting;
- encouraging the continued development of a statewide waste prevention public awareness campaign that reduces unnecessary overlap and expenditures at the local level. (Policy Reference: 134, 135, 170, 188)

Waste Diversion

Diverting waste from landfills through conversion technologies and recycling will reduce a region's reliance on landfills and will preserve the environment. Actions related to waste diversion and recycling include:

General

- Continue to support the ongoing statewide effort to quantify the "cradle to grave" full life costs of local government waste diversion programs.
- Advocate the development of subregional or multi-jurisdictional efforts to address solid waste.

Recycling

- Encourage international, federal, state, and local procurement policies that favor recycled products;
- Continue to advocate CIWMB's taking a realistic look at market potential for recycled materials.
- Advocate and support CIWMB developing policies that will develop and stimulate local, national, and international markets for recycled commodities.
- Advocate CIWMB providing a greater role to major recycling market industry groups (paper, plastics, metals, etc.) in the drafting of marketing development policy.
- Encourage consideration of rail accessibility to solid waste facilities and markets.
- Reduction requirements should be based only on the amount of residual solid waste ultimately disposed in landfills.
- Advocate and support state and local efforts to explore opportunities for voluntary actions to exceed the 50% waste diversion target.
- Encourage legislative approaches to help market recyclables through cost-effective financial support.
- Support and encourage the development of conversion technologies.

Conversion Technologies

Conversion technologies convert post-recycled residuals from material recovery facilities, currently destined for disposal, into high-value products such as energy, alternative fuels, and other industrial products. These processes divert wastes from landfills and produce energy and other products that can be used in place of consuming additional natural resources. Actions related to conversion technologies include:

- Advocate changes in state law, which provide (a) diversion credit for beneficial use of post-recycled solid waste residuals managed at conversion technology facilities, and (b) financial support and/or tax incentives for the development of pilot or demonstration solid waste conversion technologies.
- Support federal and state incentives for research and demonstration projects for solid waste conversion technologies.
- Support the siting of pilot and demonstration solid waste conversion technologies, individually or in conjunction with other technologies, giving equal consideration to environmental, public opinion, and cost factors.
- Support state legislative, CIWMB and Air Resources Board administrative actions to streamline the permitting process for solid waste conversion technologies.
- Advocate that CIWMB actively promote solid waste conversion technologies, and provides information concerning the costs and benefits of these technologies to local governments.
- Advocate county and local programs to educate the public on the life-cycle costs and benefits of solid waste conversion technologies.
- Advocate changes in State law to separate and remove conversion technologies from the definition of "transformation," and provide the diversion credit to non-burn conversion technologies.
- Consider siting solid waste conversion technologies, individually or in conjunction with materiel recovery facilities, giving consideration to environmental, public opinion, and cost factors.

Composting

Composting is the bacterial decomposition of organic materials. Composting can reduce the volume of organic materials that would otherwise be sent to landfills by about 50%. Actions related to composting include:

- Support state legislative, CIWMB, Air Resources Board and the California Water Resources Board administrative actions to streamline the permitting process for solid waste composting technologies and to address increasing regulatory challenges relative to siting, air quality, and odor issues.
- Advocate CIWMB to actively promote solid waste composting technologies and provide information concerning the costs and benefits of these technologies to local governments.
- Advocate county and local programs to educate the public on the costs and benefits of solid waste composting technologies.
- Consider siting solid waste composting technologies, individually or in conjunction with other technologies, giving consideration to environmental, public opinion, and cost factors.

Landfills

Landfills have been the major component in the solid waste management system for some time. More and more often, today, however, landfills are reaching their capacity. Public and private operators of landfills are finding it difficult to site new landfills or expand existing ones because of public opposition. Actions related to landfills include:

- Advocate the continuing review and update of the Siting Elements of Countywide Integrated Waste Management Plans and facilitate the ongoing public dialog on the role and need for landfills.
- Advocate CIWMB's taking a major role in looking at alternatives to continued waste disposal in landfills, including the development of strategies to extend the life of existing landfills.
- Support the streamlining of the CEQA process regarding landfill siting regulations and procedures.
- Encourage and support existing landfills and the siting of new landfills necessary to meet residual disposal needs.
- Support County Efforts to site landfills and to promote public dialogue related to the role and need for landfills.
- Monitor proposals to transport solid waste out-of-state and consider economic impacts to Southern California.

Actions from the Southern California Hazardous Waste Management Plan, July 1989

A key component of hazardous waste management is identifying disposal facilities. The actions put forth in the Southern California Hazardous Waste Management Plan encourage jurisdictions to accommodate the hazardous waste produced within their jurisdictions and not to place the disposal burden on other jurisdictions. Actions for hazardous waste include:

- Every county and city in the region should accept responsibility for the management of hazardous wastes in an amount proportionate to the hazardous wastes generated in the county and city.
- Each county should meet its obligation in managing hazardous wastes.
- Facilitate hazardous waste reduction by:
  - Supporting strategies that give priority to waste reduction;
  - Assisting in information sharing, intergovernmental coordination, and public advocacy;
  - Supporting a standard definition and reporting format for waste reduction in the region that simplifies reporting and improves timeliness;
  - Monitoring county waste reduction efforts; and
  - Facilitating intergovernmental cooperation in waste reduction among local government, the California Department of Toxic Substances Control, special purpose agencies, and military institutions.

Current Conditions

The current waste generation, waste disposal and diversion, and landfill capacity conditions for the SCAG region are presented in this section. Information about disposal options beyond landfills is also presented. Hazardous waste, including business and household hazardous waste, universal waste, and electronic waste are also discussed in this chapter on solid waste.

Waste Generation and Disposal

In 2003, the SCAG region accounted for 21.2 million tons of disposed waste, or approximately 57% of the statewide total of 35.8 million tons. With a statewide diversion

rate of 47%, approximately 68 million tons of total waste was generated in California, and 32 million tons were diverted or recycled.

The amount of landfill waste generated in the SCAG region dropped considerably after Assembly Bill 939 (The California Integrated Waste Act of 1989) was adopted. The Act requires local governments to reduce their waste that is disposed in landfills or other means by 25% by 1995 and 50% by 2000. Enacted at the beginning of a recession, the act was initially successful. However, since 1995, the amount of landfill waste originating in the SCAG region generally has been rising.

The increase is not due to a relaxation in the law. The average waste disposed in a landfill or transformation facility per day per person in the state decreased 27%, from 3.12 pounds per day in 1990 to 2.46 pounds per day in 2003.[1] Annual non-residential disposed waste decreased from 25.4 million tons in 1990 to 23.9 million tons in 2003, a six percent decrease.[2] During the same period, the regional population increased by 5.5 million people and business taxable sales increased 12%. However, the effect of AB 939 is clearly seen when comparing disposed waste from each county between 1990 and 2003, as seen in the below table.

Post Recycled Solid Waste Disposed in the SCAG Region, 1990-2003

Year	Waste (In Tons) by County of Origin						
	Imperial	Los Angeles	Orange	Riverside*	San Bernardino*	Ventura	SCAG Region
1990	**475,935**	**12,373,015**	**4,439,467**	**2,029,795**	**1,613,475**	**1,095,159**	**22,026,846**
1995	152,945	12,027,872	2,969,155	1,332,771	1,634,484	793,562	18,910,789
1996	142,537	11,588,049	2,970,679	1,297,423	1,662,884	773,010	18,434,582
1997	166,635	11,710,081	3,335,262	1,352,166	1,614,192	783,125	18,961,461
1998	160,848	12,344,753	3,620,851	1,471,595	1,691,378	856,189	20,145,614
1999	180,713	12,251,945	3,610,095	1,559,685	1,688,062	863,739	20,154,239
2000	181,628	12,748,153	3,834,634	1,671,600	1,768,527	892,560	21,097,102
2001	182,587	11,577,206	3,909,528	1,763,750	1,895,484	901,154	20,229,709
2002	198,454	11,581,424	3,721,655	1,844,534	1,919,841	922,480	20,188,388
2003	**229,548**	**12,028,027**	**3,900,425**	**2,032,982**	**2,099,691**	**971,480**	**21,262,153**

*includes solid waste exported out of state, but originated in the SCAG Region.

Source: California Integrated Waste Management Board. (25 May 2004). Multi-year Countywide Origin Summary. Retrieved February 9, 2005, from http://www.ciwmb.ca.gov/LGCentral/DRS/Reports/orgin/WFOrginAnnual.asp

Californians have reduced waste out of economics and out of necessity. Landfills across the state are reaching capacity. The expansion of landfills or the development of new landfills in urban areas is expensive and is often met with local opposition. Siting landfills in remote areas increases disposal costs. These remote landfills can also meet opposition as they may be located in fragile environments.

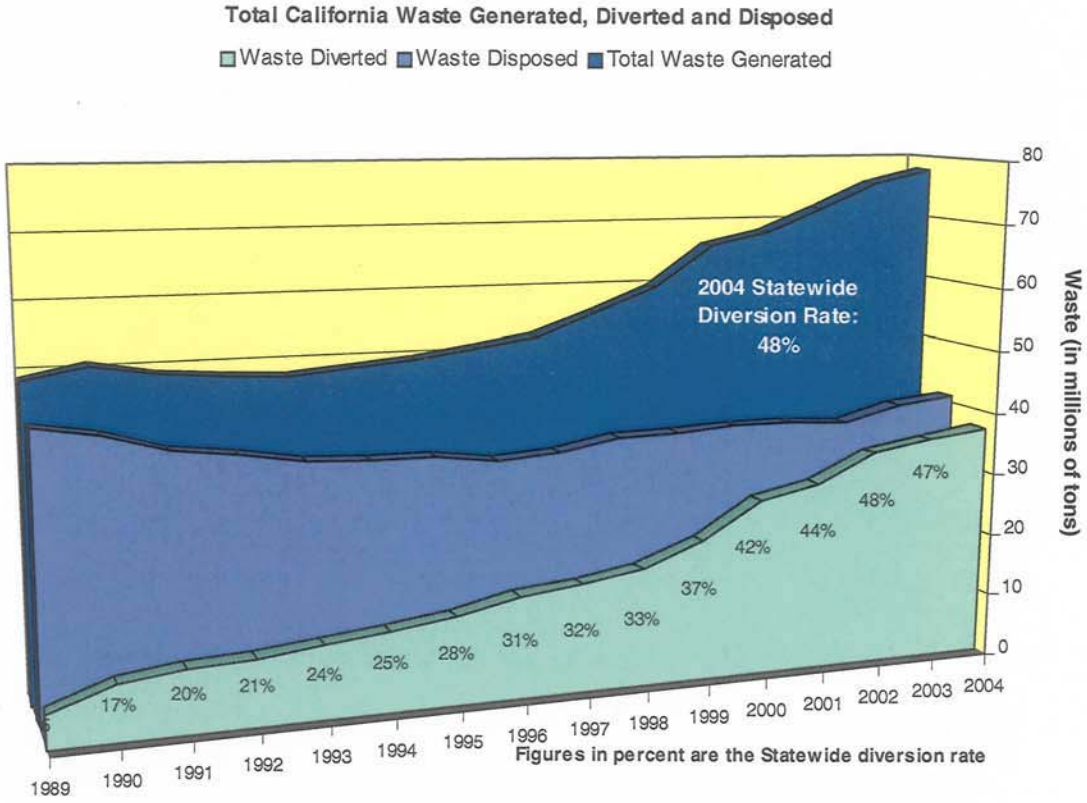
[1] California Integrated Waste Management Board. (14 April 2004). Residential Disposal Rates. Retrieved August 12, 2004 from http://www.ciwmb.ca.gov/LGCentral/Rates/Disposal/Resident.htm

[2] California Integrated Waste Management Board. (14 April 2004). Nonresidential Disposal Rates. Retrieved August 12, 2004 from http://www.ciwmb.ca.gov/LGCentral/Rates/Disposal/NonResid.htm

Jurisdictions in the SCAG region have varying success rates in meeting AB939's goals. Some are in compliance and others are having difficulties complying with the legislation. Action will be necessary for those jurisdictions in compliance to maintain compliance with an increasing population. The SCAG region is anticipating six million additional residents by 2030. The waste disposal requirements, combined with the requirements of the existing population in an increasing urbanized environment, will be significant. Even greater actions will be necessary for those jurisdictions not in compliance to eventually meet compliance.

Waste Diversion

In 1990, only 10% of the waste generated statewide was diverted from landfills. In 2002, the diversion rate was 48% and estimates for 2003 report that 47% of wastes were diverted from landfills. In 2004, diversion again was 48%.



Source: http://www.ciwmb.ca.gov/LGCentral/Rates/Graphs/TotalWaste.htm accessed June 9, 2005

Jurisdictions in the SCAG region are having varying success in meeting these goals as they attempt to swiftly implement programs and policies to divert waste away from landfills. 62 jurisdictions in the region met or exceeded the 50% diversion mandate in 2002, while 106 jurisdictions did not meet this threshold as shown in the below table.

Jurisdictions in the SCAG Region in Compliance with AB 939, for 2003			
County	**Percentage of Waste Diverted from Landfills**		
	Less than 50%	**50% or Greater**	**No Data**
Imperial	4	2	0
Los Angeles	45	25	6
Orange	18	15	0
Riverside	15	10	0
San Bernardino	19	4	2
Ventura	5	6	0
SCAG Region	**106**	**62**	**8**
Source: CIWMB. (2004). Countywide, regionwide, and statewide jurisdiction diversion progress report. Retrieved June 2, 2005, from http://www.ciwmb.ca.gov/LGTools/mars/jurdrsta.asp			

Solid Waste Disposal Composition

Organic matter and paper comprise more than 55% of the waste in California in 2003, a decrease from 65% in 1999. Construction and demolition materials increased from 11.6% of the waste in 1999 (4.3 million tons), to 21% in 2003 (8.7 million tons). All other categories of waste individually account for less than 10% of California's waste stream.

California Overall Waste Stream Composition Data (1999, 2003)		
Type of Waste	**Percentage**	
	1999*	2003**
Organic, Other than Paper	35.1%	30.2%
Paper	30.2%	21.0%
Construction/demolition	11.6%	21.7%
Plastics	8.9%	9.5%
Metal	6.1%	7.7%
Special waste (includes ash, sewage, industrial sludge, etc)	3.1%	5.1%
Glass	2.8%	2.3%
Mixed residue	1.8%	1.1%
Household hazardous waste	0.3%	0.2%
Total	**100.0%**	**100.0%**
*Source: CIWMB: 1999 California Statewide Waste Disposal Characterization Study. Retrieved August 13, 2004, from http://www.ciwmb.ca.gov/WasteChar/Study1999/OverTabl.htm **Source: CIWMB. 1999 California Statewide Waste Characterization Study. Retrieved June 9, 2005, from http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1097		

Regional Landfill Capacity

Waste that is not diverted ends up in landfills. Landfills located in or near urban areas are rapidly approaching capacity. Urban landfill expansion and urban landfill creation is unpopular and often meets vociferous opposition.

Because of this opposition, the waste industry has sought new locations to deposit waste in remote parts of the SCAG region and in other states. One location in Riverside

County, the Eagle Mountain Landfill, would have a capacity of 560 million cubic yards if permitted. An even larger landfill in the permitting process is in Imperial County. The Mesquite Regional Landfill would have a capacity of 970 million cubic yards. A third option would be to transport the waste by rail to a landfill in Utah. Fees associated with waste disposal could increase because of the increased cost to transport the waste to the landfill.

Permitted Landfill Daily Throughput in the SCAG Region	
County	**Daily Throughput (in tons)**
Imperial	2,114
Los Angeles	53,021
Orange	20,500
Riverside	19,452
San Bernardino	14,653
Ventura	4,500
SCAG Region	**114,240**
Source: CIWMB. (2003). Solid waste information system. Retrieved May 19, 2003, from http://www.ciwmb.ca.gov/swis/Search.asp	

The remaining capacity of 529.6 million cubic yards would last the region approximately 26 years if the region held constant to its 2002 waste disposal of 20.3 million tons. Permitting and opening planned landfills in Imperial County, north Los Angeles County and Riverside County would nearly quadruple the available capacity at the region's landfills to two billion cubic yards. SCAG forecasts that the region will add another 6 million people by 2030, generating additional waste.

Remaining Capacity (In Cubic Yards) at Landfills in the SCAG Region		
County	**Remaining Capacity (Cubic Yards)**	**Planned Additional Capacity (Cubic Yards)**
Imperial	8,460,468	970,000,000
Los Angeles	187,305,891	8,206,400
Orange	233,291,391	0
Riverside	48,033,915	559,693,680
San Bernardino	22,195,572	0
Ventura	30,270,129	0
SCAG Region	529,557,376	1,537,900,080
Source: California Integrated Waste Management Board. (2003). Solid waste information system. Retrieved June 6, 2005, from http://www.ciwmb.ca.gov/swis/Search.asp		

Non-Disposal Solid Waste Facilities

There are non-disposal solid waste facilities in addition to landfills. Transfer stations, rail loading facilities, material recovery facilities, waste-to-energy facilities, and conversion technology facilities all handle waste. Some of these facilities are temporary holding centers until the waste is transported to landfills. Others look to recycle the waste or convert the waste-to-energy or other usable products, diverting the waste from landfills.

Transfer Stations and Material Recovery Facilities

Transfer stations and material recovery facilities are interim steps in the process of hauling waste to landfills. Waste haulers bring the waste to these facilities and then the wastes are taken to final disposal sites. Some of these operations contain material recovery facilities that extract recyclable items from the waste before sending the remaining waste to landfills. There are over 70 active, permitted transfer/processing facilities in the SCAG region.

Rail Loading Facilities for Waste Transfer by Rail

The large population and dense development in southern California leave few acceptable options for waste disposal near where the population is centered and the waste is generated. Both planned landfills in Riverside County and Imperial County are designed to accept waste-by-rail. In addition, other waste-by-rail facilities are located outside of the region, in places as far away as Utah.

Waste-to-Energy Facilities

Although considered by the State of California to be "disposal facilities," waste-to-energy facilities take wastes that would otherwise be discarded into landfills and use them in a productive way to create energy. These facilities reduce the total amount of waste that is disposed in landfills and create products allowing for the conservation of other resources. Waste-to-energy facilities include:

- Biomass: Biomass energy is created when agricultural and forest residue, and/or organic waste is used to produce energy.
- Anaerobic Digestion: Anaerobic digestion is a biological process that produces a gas from organic wastes such as livestock manure, food processing waste, etc.
- Landfill Gas: Landfill gas power plants collect the gasses emitted by landfills and turn them into productive uses.
- Municipal Solid Waste: Municipal solid waste can be directly combusted in waste-to-energy facilities as a fuel with minimal processing, known as mass burn; it can undergo moderate to extensive processing before being directly combusted as refuse-derived fuel."[3]
- Waste Tire: Waste tire-to-energy facilities produce gypsum for agricultural use to make wallboard, fly ash (33% zinc) for animal feed and use as pigment, and bottom ash (70% iron oxide) to make cement, foundry, and road base.[4]

The California Integrated Waste Management Board provides Internet links to vendors and contractors of hydrolysis, gasification, anaerobic digestion, and other technologies with Internet web pages. Some of these vendors are located in California, with the rest in other states and countries. The conversion technology vendor links are available at http://www.ciwmb.ca.gov/Organics/Conversion/Vendors/default.htm

[3] California Energy Commission. (24 June 2002). Municipal Solid Waste Power Plants. Accessed November 16, 2004, from http://www.energy.ca.gov/development/biomass/msw.html.

[4] California Energy Commission. (24 June 2002). Waste Tire to Energy. Accessed November 16, 2004, from http://www.energy.ca.gov/development/biomass/waste_tire.html.

Other Waste-to-Energy technologies such as distillation, gasification, hydrolysis, and pyrolysis convert post material recovery facilities for which there is no recycling market demand into high-value products such as energy, alternative fuels, and other industrial products. These processes divert wastes from landfills and produce energy and other products that can be used in place of consuming additional natural resources.

Often called conversion technologies, there is an effort in the California legislature to change the existing definition of conversion technology to include these technologies and provide diversion credits.

In the SCAG region, there are four waste-to-energy facilities that have been proposed.

Planned Waste-to-Energy Facilities in the SCAG Region		
Facility	**City**	**County**
Terameth Landfill Gas (Methanol Facility)	West Covina	Los Angeles
LA City Energy Recovery Project (Rsi)	Los Angeles	Los Angeles
International Environmental Solutions* (Pyrolysis Permits Pending)	Romoland	Riverside
Colmac Energy Project	Thermal	Riverside
Source: California Integrated Waste Management Board. (17 June 2004). Solid Waste Information System. Retrieved June 10, 2005, from http://www.ciwmb.ca.gov/SWIS/Search.asp *Source: site visit.		

Transformation Facilities

Transformation facilities incinerate municipal solid waste at board-permitted transformation facilities to produce heat or energy. "Transformation" does not include composting or biomass conversion. There are only two active permitted transformation facilities in the SCAG region.

Active Permitted Transformation Facilities in the SCAG Region		
Facility	**City**	**County**
Commerce Refuse-To-Energy Facility	Commerce	Los Angeles
Southeast Resource Recovery Facility	Long Beach	Los Angeles
Source: California Integrated Waste Management Board. (17 June 2004). Solid Waste Information System. Retrieved December 8, 2004, from http://www.ciwmb.ca.gov/SWIS/Search.asp		

Hazardous Waste Disposal

A wide range of businesses in southern California generate hazardous wastes, from printers and auto shops to oil refineries and electronics manufacturers. Households also produce hazardous wastes in order to protect the public's health and the environment. This section reports the amount of regional business and industry-generated hazardous waste and household universal hazardous waste. Universal waste refers to "fluorescent lamps, cathode ray tubes, instruments that contain mercury, batteries, and others."[5]

[5] California Integrated Waste Management Board. (27 Sept. 2004). Universal Waste. Retrieved December 7, 2004, from http://www.ciwmb.ca.gov/WPIE/HazSub/UniWaste.htm.

Business and Industry-Generated Hazardous Waste

In 2003, the most recent data year available, businesses and industries in the SCAG region properly disposed of 1.3 million tons of hazardous wastes at appropriate facilities. Los Angeles County disposed of 75% of the hazardous waste.

Hazardous Waste Disposed at specialized facilities 2003		
County	**Hazardous Waste (In Tons)**	**Regional Percentage**
Imperial	72,956	5.60%
Los Angeles	971,253	74.95%
Orange	79,021	6.10%
Riverside	37,689	2.91%
San Bernardino	110,837	8.55%
Ventura	24,179	1.87%
SCAG Region	**1,295,935**	**100%***

Source: California Department of Toxic Substances Control. Hazardous Waste Tracking System. Accessed June 7, 2005. http://hwts.dtsc.ca.gov/report_search.cfm?id=1
*Errors due to rounding of decimal

The five most prevalent types of hazardous waste disposed in the region account for 75% of all hazardous waste disposed in the region. Waste oil and mixed oil are the most disposed hazardous waste, followed by contaminated soils from site clean up, and other inorganic solid waste. The top five hazardous wastes disposed in the region are displayed in the following table.

Top 5 Hazardous Wastes Disposed in the SCAG Region, 2003		
Waste Code Name	**Waste Code**	**Tons Disposed**
Waste oil and mixed oil	221	341,066
Contaminated soils from site clean up	611	248,842
Other inorganic solid waste	181	199,988
Other organic solids	352	99,329
Asbestos-containing waste	151	78,020

Source: California Department of Toxic Substances Control. Hazardous Waste Tracking System. Accessed June 7, 2005. http://hwts.dtsc.ca.gov/report_search.cfm?id=1

Household Hazardous Waste and Universal Waste

Household hazardous waste data is limited for the SCAG region. Data for household hazardous waste are only available for Los Angeles and Orange Counties. The data report the number of fluorescent lamps, batteries, and thermostats (Termed "universal waste") collected by these two counties during Fiscal Year 2000-2001. The Department of Toxic Substances Control has enacted a Universal Waste Rule governing the disposal of these types of waste.

Los Angeles County Household Universal Hazardous Waste Collected, Fiscal Year 2000-2001			
Hazardous Waste	**Amount Collected**	**Handling Capacity**	**Total Handling Cost**
Fluorescent Lamps	2,584 lamps	Contracted	$2,600
Batteries	41,585 lb	Contracted	$51,000
Thermostats	450 lb commingled items	Contracted	$80
Total			$53,680
Source: California Integrated Waste Management Board. (2002, August). Household Universal Waste Generation in California.			

Orange County Household Universal Hazardous Waste Collected, Fiscal Year 2000-2001			
Hazardous Waste	**Amount Collected**	**Handling Capacity**	**Total Handling Cost**
Fluorescent Lamps	1,200 lamps	42,000 lamps	$4,900
Batteries	6,800 lb	125,000 lb	$8,000
Thermostats	500 thermostats	60,000 thermostats	$1,900
Total			$14,800
Source: California Integrated Waste Management Board. (2002, August). Household Universal Waste Generation in California.			

The handling costs for these hazardous wastes are low. The 2000-2001 fiscal year was the first year of the program to collect and properly dispose of these household hazardous wastes. The amount of wastes collected by this program is expected to increase dramatically by 2006. The costs of the program are estimated at $20.7 million for Los Angeles County, $3.7 million for Orange County, and $262,000 for Imperial County. The other three counties in the SCAG region have not provided data for analysis.

Electronic Waste

The Information Age has made computers and other electronic equipment commonplace in most businesses and many homes. As technological advancements continue at a rapid pace, faster, smaller, and more affordable units quickly replace older electronic equipment. Consumers often desire to dispose of the "obsolete" technology and replace it with the latest equipment. Electronic waste, or "e-waste," is growing as part of the waste stream. Computers, televisions, VCRs, stereos, copiers, and fax machines are common electronic products included in e-waste. Many of these products can be reused, refurbished, or recycled. Residents and businesses need a place to properly dispose of the unwanted equipment. Jurisdictions and electronics companies have begun to develop programs to recycle these items and to dispose of them properly.

Proper management is key because some components are hazardous materials and need special handling. For instance, computer monitors and televisions have cathode ray tubes that include lead. Lead cannot be disposed of in standard landfills.

California enacted the Electronic Waste Recycling Act of 2003 to establish a funding system for the collection and recycling of certain electronic wastes. Key elements of the Electronic Waste Recycling Act of 2003 include:

- Reduction in hazardous substances used in certain electronic products sold in California.
- Collection of an electronic waste recycling fee at the point of sale of certain products.

- Distribution of recovery and recycling payments to qualified entities covering the cost of electronic waste collection and recycling.
- Directive to establish environmentally preferred purchasing criteria for state agency purchases of certain electronic equipment.[6]

Some jurisdictions and electronics stores/manufacturers host hazardous waste drop off days to collect e-waste. Some companies will come to homes and businesses to collect the unwanted equipment and then reclaim and sell and recyclable material before properly disposing of the item. There are many options available to businesses and residents to properly dispose of unwanted computer and other electronic equipment.

Future waste system options

Future waste system options will rely on a variety of disposal, diversion, and recycling options to accommodate expected waste.

Disposal

The Eagle Mountain Landfill and the Mesquite Regional Landfill will be the major available landfills to service the region in the future. Because these landfills are so far from the population that they service, transportation costs will increase.

Conversion Technology Facilities

Conversion technologies offer ways to reduce wastes and produce useful products. These types of processes will need to be explored and developed in an effort to keep up with the wastes that will be generated by a growing population.

Recycling

Recycling incentives and mandates will likely increase as waste transportation and disposal costs increase. New automobiles contain parts that are more easily recyclable.

Measurement/Indicators

Reviewing the number of jurisdictions that have met the state-required 50% waste reduction is a good indicator of how the region is doing regarding limiting its solid waste. 115 out of 190 reporting jurisdictions in the SCAG region recycle less than 50% of their wastes. More than half of the reporting jurisdictions in the region are not reaching the 50% threshold, a threshold that was stipulated for the year 2000. While the region can be encouraged by the 75 jurisdictions that have met or exceeded the state-mandated threshold, more will need to be done by local jurisdictions to reduce or recycle the waste generated within the region. The alternative could be greater state mandates/regulations.

The amount of waste disposed in landfills that was generated in the SCAG region has decreased from 1990 to 2002 due to the required increased recycling efforts of AB 939. However, as the population has continued to rise, wastes disposed in landfills have crept higher toward the 1990 amount. Some wastes are being diverted from landfills but waste

[6] California Integrated Waste Management Board. (6 Dec. 2004). Electronic Waste Recycling Act of 2003 (SB 20). Retrieved December 7, 2004, from http://www.ciwmb.ca.gov/Electronics/Act2003/.

still is being generated at a large amount per person per day. Continued population growth could lead to continued growth in wastes that could overwhelm existing landfills.

Measurement/Indicators

- Per capita solid waste generation
  Is per capita solid waste generation decreasing? Continued reduction in solid waste generation/capita would provide a quantitative indicator of progress in reducing solid waste.
  - Per capita hazardous waste generation
    Is per capita hazardous waste generation decreasing? Continued reduction in hazardous waste generation/capita would provide a quantitative indicator of progress in reducing hazardous waste.
- Per capita solid waste disposal
  Is per capita solid waste disposal decreasing? Along with the above generation indicator, this indicator is quantifiable and can indicate the amount of recycling/diversion that is occurring.
  - Per capita hazardous waste disposal
    Is per capita hazardous waste disposal decreasing?
- Diversion rate
  Are the number of cities that have met the 50% diversion rate threshold increasing? For failing cities, is there a process to determine applicable solutions?

Analysis/Responsiveness to Growth Vision Principles

SCAG's Growth Vision provides four principles: mobility, livability, prosperity, and sustainability, on which to view future actions and development. The actions in each of the chapters of the Regional Comprehensive Plan help to implement the principles.

Mobility

- Coordinating land use and transportation would ensure that solid waste handlers could move solid and hazardous waste efficiently and safely to disposal sites.

Livability

- Fostering livability in all communities would require proper siting of solid waste facilities, including hazardous waste facilities.

Prosperity

- A regional solid waste policy would address environmental justice concerns.

Sustainability

- Preserving rural, agricultural, and environmentally sensitive areas would require a regional solid waste and hazardous waste disposal siting policy.
- Developing strategies to accommodate growth that use resources more efficiently would lead to reducing and recycling wastes.
- Utilizing "green" development techniques would lead to less waste from construction.

References

California Department of Toxic Substances Control. Hazardous Waste Tracking System. Accessed September 21, 2004.

California Integrated Waste Management Board. (6 Dec. 2004). Electronic Waste Recycling Act of 2003 (SB 20). Retrieved December 7, 2004, from http://www.ciwmb.ca.gov/Electronics/Act2003/.

California Integrated Waste Management Board. (27 Oct. 2004). Multi-year Countywide Destination Summary. Retrieved December 9, 2004, from http://www.ciwmb.ca.gov/LGCentral/DRS/Reports/Destination/WFDestAnnual.asp.

California Integrated Waste Management Board. (27 Sept. 2004). Universal Waste. Retrieved December 7, 2004, from http://www.ciwmb.ca.gov/WPIE/HazSub/UniWaste.htm.

California Integrated Waste Management Board. (25 May 2004). Multi-year Countywide Origin Summary. Retrieved August 13, 2004, from http://www.ciwmb.ca.gov/LGCentral/DRS/Reports/Orgin/WFOrginAnnual.asp

California Integrated Waste Management Board. (14 April 2004). Residential Disposal Rates. Retrieved August 12, 2004 from http://www.ciwmb.ca.gov/LGCentral/Rates/Disposal/Resident.htm

California Integrated Waste Management Board. (14 April 2004). Nonresidential Disposal Rates. Retrieved August 12, 2004 from http://www.ciwmb.ca.gov/LGCentral/Rates/Disposal/NonResid.htm

California Integrated Waste Management Board. (5 Jan. 2004). 1999 California Statewide Waste Disposal Characterization Study. Retrieved August 13, 2004, from http://www.ciwmb.ca.gov/WasteChar/Study1999/OverTabl.htm

California Integrated Waste Management Board. (2004). Countywide, regionwide, and statewide jurisdiction diversion progress report. Retrieved August 13, 2004, from http://www.ciwmb.ca.gov/LGTools/mars/jurdrsta.asp

California Integrated Waste Management Board. (2003). Solid waste information system. Retrieved May 19, 2003, from http://www.ciwmb.ca.gov/swis/Search.asp

California Integrated Waste Management Board. (2002, August). Household Universal Waste Generation in California.

Southern California Association of Governments (SCAG). (March 1996). *Regional Comprehensive Plan and Guide.* Los Angeles: SCAG.

Southern California Association of Governments (SCAG). (April 1997). Solid Waste Task Force Report. Los Angeles: SCAG.

Southern California Hazardous Waste Management Authority (SCHWMA). (27 July 1989). Southern California Hazardous Waste Management Plan. Los Angeles: SCHWMA.

REPORT

DATE: July 25, 2005

TO: Regional Comprehensive Plan Task Force

FROM: Jacob Lieb, Acting Lead Regional Planner, (213) 236-1921, lieb@scag.ca.gov

SUBJECT: Expanded Regional Comprehensive Plan Approach and the California Environmental Quality Act (CEQA)

RECOMMENDED ACTIONS:
Report to each of the Regional Council Policy Committees on the potential expanded approach for the Regional Comprehensive Plan (RCP). Recommend that SCAG staff seek commitment to collaborate on the plan process from agencies with State and Federal planning and regulatory authority.

SUMMARY:
Potential changes in the California Environmental Quality Act (CEQA) may create a distinct role for regional plans. Through the RCP process, SCAG may be able to satisfy the requirements for a regional plan as discussed in the on-going negotiations at the State level. In order to anticipate and take advantage of changes to State law, SCAG would need to re-envision its RCP process to some degree. This report proposes initial steps toward that end.

BACKGROUND:
At the April and May meetings, staff briefed the RCP Task Force regarding the on-going discussions for reforming CEQA. Briefly put, the California Resources Agency has proposed a system whereby regional growth plans, such as SCAG's RCP in process, would qualify supportive developments for streamlined environmental processing. In light of those discussions, SCAG staff has prepared to approach the RCP process in such a way that the plan could take advantage of proposed provisions in the law for regional planning.

The benefit of pursuing a plan in this way would be a greatly expanded potential to actually implement the region's Compass Growth Vision by creating a preference for supportive plans and projects. The Growth Vision adopted by SCAG in 2004 identifies substantial benefits for the region's performance affecting not just the transportation system but also several environmental and quality of life factors. The basic assumption for SCAG's implementation efforts, including CEQA reform discussions, is that tools must be developed to facilitate growth and development that is identified in the Compass Growth Vision.

The attachment document titled "CEQA Improvement Advisory Group Concept Paper" was prepared and circulated by the Resources Agency. It describes the elements that a regional plan would need to contain to qualify for streamlining. Summarized briefly, the regional plan should:

- Establish quantifiable plan outcomes across the full range of planning and resource categories.
- Include mitigation measures that are applicable at the project level.
- Propose funding and other incentive mechanisms for supportive implementation at the local level.

- Fully incorporate and reconcile various plans prepared at the State and regional level.

The Task Force has previously discussed and agreed to pursue the addition of plan outcomes as a focus of activity for the 2005-2006 Fiscal Year. In addition, we will be completing the RCP process at the same time that the Regional Transportation Plan is adopted. This will allow SCAG to combine the environmental review effort for both plans. At this time, staff is further proposing that SCAG formally contact State and regional agencies that prepare overlapping plans, and engage a dialogue on reconciling plan provisions and creating outcomes. The goal of such outreach would be to include these agencies as partners in the RCP process.

It should also be noted that pursuing a regional plan as described in the CEQA discussions would alter the original intent and organizing themes of the RCP. The attached chart, labeled "SCAG Regional Comprehensive Plan" reviews how the potential new process differs from the current approach. At this time, staff is proposing that the Task Force report to each of the Regional Council Policy Committees on these issues in order to seek further discussion.

Attachment: CEQA Improvement Advisory Group Concept Paper,
SCAG Regional Comprehensive Plan: Comparison of Current Approach with Potential Expanded Approach (Chart)

DRAFT—PRELIMINARY AND TENTATIVE
FOR DISCUSSION ONLY

CEQA Improvement Advisory Group Concept Paper
Linking Voluntary Smart Planning with CEQA Improvement

A new chapter would be added to Title 7 (Planning and Land Use) of the Government Code that provides for the following.

1) A voluntary smart plan may be adopted by a council of governments as defined in Government Code Section 65582, or a joint powers agency formed by at least three public agencies with a combined population in excess of 100,000 residents, or a county with a population in excess of 100,000 residents. The voluntary smart plan must take into account the plans and planning activities of state, federal and other public and private agencies. To accomplish this objective, such other entities (including air districts, watershed councils, and other resource agencies) will participate in the voluntary smart planning process. The process will also take advantage of any existing planning exercises, including regional transportation plans, regional conservation planning concepts within any regional habitat conservation plans or natural community conservation plans, and any regional agricultural planning (such as Department of Conservation mapping of productive agricultural land).

2) The council of government, joint power agency, or county will enter into discussions with relevant local, state, and federal entities, as well as other relevant parties, to develop a voluntary smart plan that is designed to meet certain state goals and outcomes (described below), as well as incorporate the adopted general plans of the participating localities. There must be significant public outreach and education to ensure public input into the planning process.

3) If the participating local jurisdictions reach consensus on a voluntary smart plan, then each local jurisdiction shall agree to implement the voluntary smart plan and, if necessary, update its general plan and zoning ordinances to conform to the applicable policies within the voluntary smart plan. Future general plan updates or amendments of the general plans of the participating localities must also incorporate state goals that are applicable to the locality.

4) The voluntary smart plan must undergo CEQA review. The legislation may provide a special procedure for voluntary smart plans, similar to a General Plan EIR or the Master EIR, i.e., a front-loaded approach that seeks to eliminate or minimize subsequent environmental review. The entity undertaking the voluntary smart plan (i.e., the council of governments, joint powers agency, or county) would be the lead agency and would certify the EIR. Each local plan could be challenged only on the ground that it was not consistent with the voluntary smart plan.

5) After approval of the voluntary smart plan and certification of the plan's EIR, project sponsors can develop specified projects identified and evaluated within the voluntary smart plan EIR with little or no subsequent CEQA review. Legal challenges would

be limited to whether the project was consistent with the local plan and implemented voluntary smart plan requirements.

6) The State will develop a blueprint of goals and outcomes that will, among other things: (a) foster the development of more housing for all income levels; (b) improve transportation; and (c) protect open space, resource land, and productive agricultural land. The State blueprint will provide general parameters and directions that can then be applied regionally and locally. The voluntary smart plan must meet these goals and outcomes. Examples of goals and outcomes include:
   a) Adequate housing supply (parameters for adequate housing supply)
   b) Habitat and agricultural protection (parameters for smart conservation of valuable areas)
   c) Orderly pattern of development (e.g., growth in environmentally preferable locations; parameters for transportation, infrastructure)
   d) Efficient use of land (e.g., parameters for reduction of amount of raw land converted for development)
   e) Adequate water supply (e.g., parameters for insuring dry weather supply, reducing consumption).

7) Financial incentives for voluntary smart planning could come from a variety of sources:
   a) Regional planning law currently allows for tax levies; this could be modified to support voluntary smart planning.
   b) An infrastructure bond measure could provide infrastructure funding for voluntary smart planning areas.
   c) Environmental enhancement fund (project sponsors pay into a fund instead of doing an EIR). It has been estimated that developers might pay up to $20,000 per housing unit for certainty of development within 6 months of application, with no CEQA review.
   d) Federal transportation dollars or other federal funds
   e) Tax increment financing or Mello Roos financing.
   f) Half cent increase in sales tax.

8) Reporting and Accountability. The council of government, joint power agency, or county shall be responsible on an ongoing basis for monitoring the success of the voluntary smart plan in meeting the goals and outcomes identified by the state and reporting its findings on a periodic basis.

SCAG Regional Comprehensive Plan
Comparison of Current Approach with Potential Expanded Approach
DISCUSSION DRAFT
June 2005

	Current Approach	**Potential Expanded Approach**
Organizing Theme	Growth Vision, SCAG's urban form and development strategy for the region.	Broad principles or theme statements based on the Growth Vision.
Primary Content	SCAG Regional Council Policies, and associated action plans to implement regional policies.	Outcome/performance measures organized by CEQA resource categories.
Intent	To provide a clear path for independent implementation consistent with the Growth Vision.	To coordinate and integrate all of the planning work in the region under the loose umbrella of the Growth Vision. To provide the functional equivalent of CEQA documentation at the regional plan scale, thus facilitating project and mitigation delivery.
Outside Content (e.g. plans prepared by other agencies)	Referenced and limited incorporation based on mutually supportive ideas.	Major plans around CEQA resource categories are fully integrated. Outside entities must conform their plans to a) general themes, and b) outcome measures.
Environmental Review	Broad cumulative analysis of region's preferred and alternative growth patterns.	Identification of impacts for all supportive/consistent projects. Creation of locally applicable mitigation procedures for consistent projects.
Process	Content development and approval all under the purview of SCAG, but with broad public participation, input.	Collaborative among all responsible agencies for various resource areas (e.g. Public Utilities Commission, Water Agency, etc.).